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**HALF-YEARLY ABSTRACT**  
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**MEDICAL SCIENCES.**  
**JANUARY—JUNE,**  
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BEING

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BRITISH AND CONTINENTAL MEDICAL WORKS PUBLISHED  
IN THE PRECEDING SIX MONTHS :

TOGETHER WITH A

SERIES OF CRITICAL REPORTS ON THE PROGRESS OF MEDICINE AND  
THE COLLATERAL SCIENCES DURING THE SAME PERIOD.

EDITED BY

W. H. RANKING, M.D. CANTAB.,

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NORWICH HOSPITAL;

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# HALF-YEARLY ABSTRACT

OF

THE MEDICAL SCIENCES,

ETC.

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## PART I.

PRACTICAL MEDICINE, PATHOLOGY, & THERAPEUTICS.

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### SECT. I.—GENERAL QUESTIONS IN MEDICINE.

(A) CONCERNING HYGIENE.

ART. I.—*On the Treatment of Epidemics.*

By Dr. E. W. RICHARDSON.

(*British Medical Journal*, December 5, 1864.)

IN an admirable address on the present position and prospects of Epidemiological science, delivered at the opening of the thirteenth session of the Epidemiological Society, Dr. Richardson, speaking upon this subject, says:—

“Light appears to be breaking in upon us in respect to the treatment that should be adopted in cases where the epidemic disorders have seized on suffering humanity. We ought neither to hesitate, nor pause, nor tire, until we have determined some means, definite in their design, by which some reduction of their 25 per cent. of mortality shall be secured. At the present moment our practice, although successful in regard to symptoms of a superficial kind, is vague, contradictory, and unsatisfactory. It will remain thus until an effort is made to reform it. Worse it could not well be; better it must be. To inaugurate the reformation, to ascertain the way we should go, we must first determine the essential differences of various epidemic disorders. If it be true, as has been suggested, that one class of these affections is accompanied with excessive formation and with separation of fibrine, it will follow that those remedies should be as nearly as possible specific which check this formation, tend to hold fibrine in solution, and prevent decomposition. Such remedies are certainly in our hands, and in a rude way their value has been determined: what is wanted is a more rigorous analysis of their worth. At this moment, the remedies to which reference is made are two in number: ammonia and the sulphites. Ammonia, first introduced into practice in the treatment of scarlet fever, by Dr.



Peart, has since been used by Dr. Witt, by myself, and by other physicians, with a success in this particular disease which may be considered almost as specific; it has also been used with equal success by Mr. Swann, of Barrowden, in the treatment of the allied disease diphtheria.

"The sulphites of soda and potassa, introduced first to notice by my honoured friend, Dr. Polli, of Milan, appear to act equally well, and even to prevent death after the injection into the veins of animals of pus, decomposing albumen, and decomposing blood. The action of both these remedies is the same; both produce their effects, not by removing oxygen nor by combination, but simply by arresting the modified fermentative process that has been excited. But in using these remedies we must be cautious that we overstep no bounds; and that with each disease we determine whether it be advisable to increase or to reduce the fermentative change. In that class of disease where there is great solubility of blood, it appears to be a more reasonable practice to facilitate the organic changes, by remedies which hasten metamorphosis, and neutralize the alkaline products. Hence the acknowledged although partial value of mineral acids in typhus; hence, probably, the reason why typhus disappears, as a disorder, beyond a certain degree of temperature. And, again, as every fermentative change, as every organic change, turns, in fact, for its development on the motion imparted to the ultimate molecules through heat, we have a great lesson yet to learn in miniature, from those grand series of geographical facts to which I have briefly referred on a previous page. What is true of the world at large as a great chamber, is surely true in smaller chambers; and it is not unlikely that experience will yet show that, by artificial variations of cold and of heat, all the epidemic diseases may be effectually commanded.

"In conclusion, in the matter of treatment, we have had recently opened for our inquiry certain important lights relative to the removal and the destruction of those organic poisons which float from the bodies of the sick. I do not refer to ventilation, nor to cleanliness; those are implied and are locked up in the conscience of every well-informed medical man; but I refer to the employment of various vapours which, diffused through the air of the sick room, destroy the organic particles, and render the air pure and inoffensive. Through an observation of Mr. Hoffman, of Margate, which I have endeavoured to elaborate, we have now placed in our hands a means so simple, so practical, so effective, that I have ventured to break through the dignity of an introductory address to bring it here in the way in which it is applied. The substance employed is simple iodine. It is used both in a permanent and in a special manner. For permanent use, the iodine is merely placed in a common chip-box, or in a glass, covered with a layer of muslin. For special purposes, the iodine, placed in a saucer, is volatilized by the heat of a candle into the air of the sick room, until the odour of iodine is just perceptible at all points. By this means, in one of the severest cases of confluent small-pox I ever saw, and which I attended last summer in consultation with Mr. Hubbard, of Kensington Gardens,

we were enabled to deodorize the air of the patient's apartment with a facility and a comfort I have never before experienced. The process contributed, I think I may say, largely to the recovery of that case.

"Iodine, thus used, also affords a good practical index as to the purity of the air in an apartment. If, on volatilization, the odour of the metalloid be long in being developed, the evidence is clear that the air is proportionately charged with organic matters."

## ART. 2.—*On Public Health.*

By Dr. CHRISTISON, Professor of Materia Medica in the University of Edinburgh.

(*Social Science Review*, October, 1863.)

Professor Christison presided over the Public-Health Section of the National Association for the Promotion of Social Science at its recent congress in Edinburgh. In the address which he delivered at the opening of the proceedings of the section, he said :—

"Public Health, as a branch of social science, treats of the agents which influence, for better or for worse, the average bodily vigour, mental energy, healthiness, and length of life of the community. The main agents of this kind are the earth, and its covering, the air, water, and heat, food, drink, and exercise, occupation and habits, education, whether bodily or mental, and moral discipline. They act by favouring or engendering diseases, or, on the contrary, by circumscribing, or extinguishing them. Very few diseases are exempt from the influence of one or more of these agents. But hitherto the researches of the inquirer into public health have been necessarily confined to certain great classes of diseases, and some special diseases of frequent occurrence. I have thought it might interest you more and be more in keeping with my own pursuits if, instead of the eloquent general views usually dealt with by those in my position, I should endeavour to offer you a sketch of the principal mode in which the diseases or groups of diseases are influenced by the agents which affect the public health; and attempt to illustrate by a few apposite instances what has been already done, and what remains to be done, for lessening the prevalence of such diseases, and the mortality, ill-health, and pecuniary loss arising from them." After indicating a few points in which the Scottish registration returns were defective and unsatisfactory, and suggesting some improvements in the classification of diseases, Dr. Christison said the faulty returns of which he spoke, useless for statistical purposes, included a fourth of the whole number of deaths. "This fact," he continued, "suggests a grave matter for our consideration here. We take into high favour the statistical method of investigation. In our prospectus, inviting papers, we give an express preference to those based on statistics. But, in truth, in questions relative to public health, the statistical method of getting them may be quite as open to fallacy as any other. There are questions, indeed, as to which this method is positively more fal-

lacious than any other—for example, than general observation and experience—if the statistical basis be so loose as to embrace only two-thirds of the facts which the questions have to deal with. For my purpose a register so defective was good for very little—for much less, certainly, than the general impressions of an acute physician, which it was my aim to test. I have been repeatedly arrested in the same way in attempting to arrive at results for illustrating this address. I hope I may not be thought to have been wrong in bringing this matter forward on the present occasion. The Legislature has supplied us with a complex, costly, and, to the members of my own profession, troublesome machine, which, for want of a little repair and extra outlay, has hitherto put out only an inferior article. Such a state of things, in regard to what must be the fundamental basis of most exact inquiries into public health, ought not to exist in a country like our own. I submit that the register ought to be put to rights, if possible, and that this association may usefully lend its influence and aid for the purpose. It must not be inferred from what has been said that the Scottish register may not be applied with security to many statistical inquiries into the public health; on the contrary, it is a sound source of information for the very next topic which I propose to bring under your notice.” Professor Christison then proceeded to notice the deaths from the zymotic class of diseases, which caused about one-fourth of the whole mortality, and which were diseases easily recognised even by unprofessional people. He then noticed the fact that ague had entirely disappeared in Scotland, tracing its gradual decline and disappearance early in the present century; and after this he noticed at some length the character and effects of various types of fever, remarking particularly on the constant presence of typhus in a non-epidemic shape, and on the circumstance that that type of fever has of late been gradually decreasing in Edinburgh. “Why is it,” he asked, “that typhus, which had been almost a perpetual pestilence in Edinburgh for a third of a century, has been of late wearing itself out, and last year almost flattering us with its extinction? The cause has certainly not yet been found out. My own strong impression is that the secret will be found to be connected with the theory which has been much canvassed in the present day—the successive changes of type or constitution of epidemic diseases. But as this is a favourite theory of my own, I shall not here insist on it further than by warning all inquirers into the origin of zymotic diseases in foul miasms, that they run great risks of ascribing to these, and the removal of these, fluctuations in the prevalence of such diseases which are often far more probably owing to a more recondite cause—a change in epidemic constitution.” After stating that the experience of all great towns showed that typhus never could prevail in the face of employment, Professor Christison noticed the introduction and rise of the various forms of enteric fever. He said in relation to it that of all forms of fever none had been more confidently ascribed than this by London writers, medical and non-medical, to faulty drainage and faulty water-closets. If they were to believe what some had advanced on the subject, there

was no case which might not be traced to foul air derived mainly from one of these sources. Were this a well-established principle in social science, the extinction of so deadly a fever should be no very difficult matter. Through the publicity given to the discovery by this association, and the influence of its members, they might hope to see protection established far and wide against the pestilence. But he was sorry he could not call on them to assent to this theory, and carry out its consequences, for there were insurmountable facts in its way. During the period that this scourge had been increasing in London, had London been less drained, or the habits of its working classes less cleanly? Did the disease generally appear where drainage was bad or water-closets wanting or faultily constructed? Did it attack workmen who lived in London drains as well as those over them, near them, or far from them? He believed all these queries must be answered in the negative. So far as Edinburgh was concerned, the fever did not by any means generally break out where the streets were ill-drained, water-closets wanting, and habits filthy. In countless places of that sort in Edinburgh it was unknown, and it was unknown near the foul meadows of Craighentinny. Dr. Christison then made a brief allusion to diphtheria, a disease far from common in Edinburgh. It had, however, a strong local interest, having shown an attachment to those irrigated meadows. He wished to add in regard to those meadows that he had, after inquiry, been compelled to surrender his prejudices against them, being satisfied that neither typhus, nor enteric fever, nor dysentery, nor cholera, is to be encountered in or around them, whether in epidemic or non-epidemic seasons, more than in any other agricultural district of the neighbourhood. He thought it right in reference to the late introduction of the Craighentinny system of irrigation into the vicinity of other large towns, that these precise facts should be known. Dr. Christison then proceeded briefly to consider the group of diseases which arise in a *prava corporis constitutio*—a depraved condition of the human constitution—and said: "Philanthropists and legislators, in dealing with the unhealthiness of towns, have, until lately, had chiefly to do with epidemic diseases as their main source of excessive mortality. But it is apparent that tubercular diseases are a still more serious source of destruction to the well-being of a great city. It is also most probable that the abatement of their ravages will need a different description of measures from those which have been proved to be serviceable against diseases of the epidemic class. The discovery of the necessary measures is a duty which it peculiarly becomes this association to press upon the Government of the country, and also upon the great, the wealthy, and especially those whose business of life is to amass wealth through the labour of the working classes, and whose requirements have occasioned the concentration of the people in overgrown towns, with all its concomitant evils. On considering the whole circumstances attending the development or the circumscription of tubercular diseases, I cannot see any more probable source of the fearful growth of these diseases in great towns than the want of open-air exercise. All special inquiries hitherto made, except in the instance of one or

two trades which have a special evil of their own to contend with, point in the same direction for the cause of concentration of tubercular disease in great towns,—viz., a conjunction of defective exercise and exclusion from the open air. If this prove, on a more extended inquiry, to be the great or universal cause of evil, there is no remedy within reach except the spreading out of a city, the finding lungs for it in the shape of parks and gardens, the surrender to the working classes, and above all, to the sedentary trades, of a proportion daily of that time which is now too entirely demanded of them for the toils of their craft, and the creation among them of a taste for the active exercises which were the pastime of their ancestors. But we have now before us from sundry quarters such precise and concurring evidence of the enormous extent of evil arising from the present mode of town life among the working classes that, looking especially to the still increasing growth of our already overgrown great towns, and the stationary, or rather retrograding, numbers of our rural population, there is a loud call for public, systematic, extensive, though it may even be costly, ameliorations." Professor Christison concluded by giving some remarkable evidences of the almost total absence of tubercular diseases from the insular parts of Scotland.

ART. 3.—*On the Distribution of Mortality in England.*

By the REGISTRAR-GENERAL.

(*Parliamentary Paper*, 1863.)

A return has recently been laid before Parliament of the Average Annual Proportion of Deaths from certain Specified Causes, at Specified Ages, in England generally, and in each Registration Division and Registration District of England, during the decennial period 1851—60. The return was prepared for the use of the Medical Department of the Privy Council by the Registrar-General. It is understood that a more voluminous digest of the mortuary returns of the ten years mentioned is in course of preparation in the Registrar-General's Office, and will shortly be published. The return already published is of peculiar importance. It shows the comparative mortality from the most fatal diseases and classes of diseases in every registration district of England. A digest of this character has long been needed. Such a digest forms the necessary complement of a Census of the population, and it is to be trusted will accompany every future Census.

The return shows for each registration district the population at all ages, and the *deaths*, per 100,000 living, at different ages, from the following causes and categories of causes, arranged thus:—

<i>At all Ages:—</i>		Average deaths per 100,000 in England generally.
All causes	.	2,217
Fevers ("Typhus" of Registrar-General)	.	91
Diarrhœa, Dysentery, and Cholera	.	108
Scarlatina	.	88
Diphtheria	.	11

	Average deaths per 100,000 in England generally.
<i>At less than One Year:—</i>	
All causes . . . . .	17,731
<i>At less than 5 years of Age:—</i>	
All causes . . . . .	6,760
Diarrhoea, Dysentery, and Cholera . . . . .	526
Diseases of the Respiratory Organs (ex- cluding Phthisis) . . . . .	1,040
Diseases of the Brain (excluding Hæmop- tysis) . . . . .	1,337
Small-pox . . . . .	103
Scarlatina . . . . .	419
Measles . . . . .	280
Hooping-Cough . . . . .	362
<i>At Ages between 15 and 55:—</i>	
Phthisis Pulmonalis—	
Males . . . . .	370
Females . . . . .	403
Other diseases of the Respiratory Organs—	
Males . . . . .	119
Females . . . . .	84
<i>At Ages between 35 and 55:—</i>	
Diseases of the Brain—	
Males . . . . .	153
Females . . . . .	122

A supplementary return shows the mortality from the same causes, similarly arranged as to age, in those groups of districts in which the mortality may be taken as standards for comparison. Also the death-rates, male and female, from phthisis pulmonalis, and the diseases of the lungs, at different ages and districts, from pulmonary affections, as well as in the three groups of districts referred to.

The fact most strikingly brought out by the returns is the extraordinary difference in degree of prevalence, in different districts, of the diseases classified. To account for this difference the conclusion is inevitable, that there must be accompanying differences in the distribution of the causes of disease. An important basis which the returns afford for a systematic investigation into the circumstances determining individual mortality is evident. The practical value of such investigations has already been shown by Dr. L. Headlam Greenhow's inquiries, under the direction of the Privy Council, into the causes of the high death-rates from infantile pulmonary and diarrhoeal diseases in certain districts.\* The deaths from diseases of the respiratory organs (excluding phthisis) in children under five years of age, range from less than 100 in many places to 2246 in St. George's-in-the-East (London), 2334 Liverpool, and 2570 Ashton-under-Lyne. Scarlatina fever ranges, at all ages, from

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\* See Papers on the Sanitary Condition of England.—*Blue Book*.

0 in the Scilly Isles to 187 in Bolton, Lancashire; and at less than five years, from 0 in the Scilly Isles to 870 in Liverpool. Diphtheria ranges from 0 in the Scilly Isles to 80 in London and Yorkshire.

ART. 4.—*On the Unfavourable Influence of Sudden Change of Climate.*

By Dr. J. HENRY BENNET.

(*Lancet*, August 22, 1863.)

Dr. Bennet directs attention to the unfavourable influence exercised upon health by the sudden change from a northern to a southern, or from a southern to a northern climate, so constantly experienced in these days of swift travelling:—

“In October,” he says, “invalids leave England’s moist atmosphere, when the weather is already getting cold, and the evenings and mornings are foggy. The express train is often taken at Paris for Marseilles, and in sixteen or twenty hours the dry sunshiny Mediterranean region is reached. There it is still summer; the sun is powerful; the temperature high, usually above 70° Fahr. The liver and skin, which were already in England relieved from the stimulus of our mild summer heat, are called violently and suddenly into action. The result is diarrhœa, bilious attacks more or less severe, skin irritation, urticaria, boils, &c. Diarrhœa is so common that few northerners escape; and it is universally, and erroneously I believe, attributed to change of food, to wine, and to such influences.

“These attacks are most severe with those who hurry their departure from England, push rapidly to their destination, and reach the south in September or early in October. In my opinion the last week of October is quite early enough for invalids, or even healthy northerners, to arrive in the south of Europe. The cool weather of autumn does not begin until about the second week in November; and a month or six weeks of hot, oppressive southern weather, with a liberal allowance of mosquitoes, is generally damaging to the health of “north country people.” The worst cases of bilious derangement that I have to attend each autumn are amongst such.

“By the end of April, or the early days of May, the sheltered Riviera undercliff begins to be disagreeably warm. Moreover, fine midsummer weather has been enjoyed so long that it becomes difficult to believe that winter still reigns in the north. The invalids are tired, also, of their six months’ absence from home, and their hearts are set on the return. Once the homeward journey has commenced it is generally rapidly carried on, and many arrive in Paris or in England early in May, much too soon for their own good. In the north of Europe, if the wind is from the south, in April and May the air is mild and balmy, and vegetation makes rapid strides; but until the mountain lands of Norway and Sweden are freed, or partly so, from their canopy of snow, which does not

take place until June, a north-east wind brings cold, chilly weather and night frosts. It is this cold, chilly atmosphere, an atmosphere, too, more or less loaded with moisture, that often meets the invalid on his return home. The skin and liver, previously in full operation, are checked suddenly if the journey has been a rapid one, extra work is thrown on the lungs and kidneys, and very often severe attacks of influenza, of coryza, of bronchitis, of hæmoptysis, are the result.

"I have pointed out the evil: I must now point out the remedy. It is to ignore the facilities afforded by express trains, and to make both the southern and the northern journeys in such a manner as to become acclimatized to the great changes.

"Serious invalids who intend to winter in the south of Europe, are better out of England the last week in September, or early in October; but, as we have seen, their winter residence is scarcely fit for them before the end of October. The two, three, or four intervening weeks should be spent on the road. A quiet, leisurely progress southward allows the human economy to gradually accustom itself to the change of climate. A favourite station with me is Fontainebleau, thirty miles south of Paris. The climate is continental, drier than that of England, the hotels are good, and the forest scenery is very interesting and beautiful. A week or ten days may be spent there both pleasantly and profitably for health, much more so than in Paris.

"Farther south we have Valence, Aix, Nîmes, Arles, &c. I would, however, more especially recommend a small watering-place which I may nearly lay claim to have discovered, as far as my countrymen are concerned. It is Gréoulx, a five hours' picturesque drive from Aix-en-Provence. Gréoulx is merely a village, with a large comfortable hotel, in its own grounds, erected over a hot sulphur spring, one of the most powerful and longest known thermal waters of the south of France. Its celebrity, however, is all but entirely confined to that part of France. I myself found it out by the map, whilst trying to discover an autumn and spring intermediary station. I visited it last May, and was much pleased with the scenery from Aix, with the hotel and its grounds, and with the very lovely district in which it is situated. There are two wild mountain rivers—the Durance and one of its tributaries—within a mile of the house, and fishing and shooting are provided for the inmates, with all the resources of French social country life. The hotel makes up some 200 beds. Gréoulx is quite out of the beaten track, far away from railways, amongst the hills of Provence, and a residence there must have many charms. I sent a little colony of my Mentone friends and patients there this spring, and they were all delighted with it. There is an intelligent resident French physician, Dr. Jaubert. I do not think a pleasanter place could be found to spend a fortnight in on the way south.

"The same course can be followed by invalids on their return north. The departure from Mentone, Nice, Cannes, or from Italy or Spain, can take place at the end of April, or on the first day of May; and a leisurely journey may be made towards the north, so as to reach



England by the end of May or the first day of June. Gréoulx is open on the first of May, and is even thus early very lovely; the deciduous trees in full leaf, and the nightingale in full song. A fortnight at Gréoulx, a week at Fontainebleau, and May is pleasantly consumed, and England and its climate reached by slow stages, which neutralize the risks attendant upon the 'cannon-ball' style of travelling."

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#### ART. 5.—*On Training.*

By the Rev. SAMUEL HAUGHTON, M.D.

(*Dublin Medical Press*, Jan. 6, 1864.)

Hippocrates has written (to paraphrase his third Aphorism):—

"Amongst gymnasts, development of body carried to its utmost extent, is dangerous, for it cannot continue; and since it cannot continue, nor be increased, it must fall off; therefore it is expedient to resolve it, not by slow degrees, in order that the body may acquire a new commencement of growth; neither should the reduction be carried to its farthest point, for this also is dangerous, but it should be brought to that degree which is suitable to the nature of each gymnast."

In the second aphorism, Hippocrates treated of the quality of medical evacuations; "in this," remarks Dr. Haughton, "he discusses the quantity and rate; and derives, as before, a medical precept from the observation of an admitted case. He quotes the case of athletes, and draws his precept from their recognised practice."

Amongst the ancients five kinds of athletic exercise were recognised—viz., wrestling, boxing, running, jumping, and throwing a weight; and an athlete, skilled in all, was called, by the Greeks, *Pentathlus*, and by the Romans, *Quinquertius*. The diet of the athletes consisted of figs and raw meat, especially that of swine and goats, and the cervical and inguinal glands of these animals were held in especial repute, on account of their property of satiating the appetite for a longer time than other food could do. For the same reason, unleavened bread and cheese were considered useful. While undergoing training and using the athletic diet, a minimum quantity of liquid was used, wine being altogether prohibited.

The rules of training for manly sports, in use among ourselves, are very similar to those of the ancients, and the maxim of the present aphorism is constantly acted upon. For each kind of contest there is a recognised time necessary for training, which is, for example, six weeks for rowing, and three or four months for boxing, and it is well known that it is as imprudent to commence training too soon, as too late, for the perfect condition can only last for a short time. The trained athlete, when his contest was over, was rapidly reduced by bleeding to a much lower condition; a practice followed by some trainers of horses, who bleed the trained horse before turning him out to grass. The great danger of athletic exercises arises from the unquestionable fact, that in many cases there

is no relation between the development of the voluntary muscles and the increased action of the heart required to meet the demands of the growing muscles. Increased action and growth of muscle imply increased rapidity of change of tissue, and increased supply of fresh blood to repair the waste. Happy is the gymnast whose heart responds easily and fully to the increased demand made upon its work! In many cases, possibly in the majority, this does not occur; and we too often witness the melancholy spectacle of a youth of athletic exercises followed by a manhood marked by feeble action of the heart, or by incipient aneurism of some of the great internal arteries.

The author suggests the following as an explanation of the want of sympathy between our voluntary and involuntary muscles. It is probable that each of us derives his locomotive organs and general build of body from one parent, and his viscera, especially the brain and heart, from the other; and hence, probably, the want of correspondence between the animal and organic constitutions, so often noticed by thoughtful observers.

A singularly interesting illustration of the effects of over-training is afforded by the state of Heenan, the prize-fighter, after his struggle with King, on the 10th December, 1863. The following account is from the *Lancet*:—

“Four or five hours after the termination of the fight on the 10th inst., he arrived at a friend's house in London. Mr. J. F. Clarke saw him immediately. He was then suffering from great exhaustion. His face was considerably disfigured, and there was a cut on the right side of the upper lip about half an inch in length, which required a stitch. There were no bruises of any consequence about the body: but there were a few scratches on the chest. The action of the heart was very feeble, and the pulse scarcely perceptible. Suitable medicines were resorted to, under the influence of which he gradually improved until the 12th. On the evening of that day he had a fainting fit. On the 14th Dr. Tanner saw him in consultation with Mr. Clarke. He was then weak, his nights had been restless, and there was considerable uneasiness on taking a deep inspiration. On examining him all marks about the chest had nearly disappeared, while the bruises upon the face were evidently quickly fading. The cut in his upper lip had healed. The right nasal bone was loosened from its articulations; but there was no fracture. On carefully practising auscultation, the heart's action was found to be feeble, though there was no bruit, the valves acting efficiently. The pulse was weak, very compressible, and rather above 100. The left lung was healthy; but over the apex of the right there was dulness, with evident signs of congestion. On either side, at the back of the neck, there was considerable stiffness, which was ascertained to exist chiefly in the tendinous attachments of the trapezius muscle to the occipital bone, ligamentum nuchæ, dorsal vertebræ, and spine of the scapula. The immense development of the muscles about the shoulders and chest was very remarkable. They stood out prominently, and as little encumbered with fat as if they had been cleaned by the scalpel. In firmness they resembled cartilage. The

same conditions were also apparent in the recti muscles of the abdominal wall, the tendinous intersections (*lineæ transversæ*) of which were strongly marked. But with all this splendid development it was evident that Heenan had received a shock from which his system was only slowly recovering; though whether this loss of power was due to the punishment received in the fight, or to the hard training which he had previously undergone, may be a disputed point. As physiologists, it seems to us highly probable that his training had been too prolonged and too severe. When Heenan went into training on Wednesday, the 23rd of September—just eleven weeks before the match—his weight was 15 st. 7 lbs. As he stepped into the ring on the 10th inst. he was exactly 14 st. At the same time, King weighed 13 st., though he was three-quarters of an inch taller than Heenan, whose height is 6 ft. 1½ in. Those who know what severe training means will, perhaps, agree with us, that Heenan was probably in better condition five weeks before meeting his antagonist than on the morning of his defeat; although when he stripped for fighting the lookers-on all agreed that he seemed to promise himself an easy victory, while exulting in his fine proportions and splendid muscular development.

"It is now clearly proved that Heenan went into the contest with much more muscular than vital power. Long before he had met with any severe punishment—indeed, as he states, at the close of the third round—he felt faint, breathed with much difficulty, and, as he described it, his respiration was "roaring." He declares that he received more severe treatment at the hands of Sayers than he did from King; yet at the termination of the former fight, which lasted upwards of two hours, he was so fresh as to leap over two or three hurdles and distance many of his friends in the race. It was noticed on the present occasion that his *physique* had deteriorated, and that he looked much older than at his last appearance in the ring. Without offering any opinion as to the merits of the combatants, it is certain that Heenan was in a state of very deteriorated health when he faced his opponent, and it is fair to conclude that that deterioration was due in a great measure to the severity of the training which he had undergone. As with the mind, so with the body, undue and prolonged exertion must end in depression of power. In the process of the physical education of the young, in the training of our recruits, or in the sports of the athlete, the case of Heenan suggests a striking commentary of great interest in a physiological point of view. Whilst exercise, properly so called, tends to development and health, excessive exertion produces debility and decay. In these times of over-excitement and over-competition in the race of life, the case we now put on record may be studied with advantage."

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## ART. 6.—*Physiological Effects of Exercise upon the Human Body.*

By Dr. SPECK.

(*San Francisco Medical Press* ; *British Medical Journal*, March 19, 1864.)

The conclusions of Dr. Speck upon the influence of exercise on the human body are as follow. Corporeal exercise diminishes the weight of the body. The use of water during corporeal exercise appears to act differently than during reaction. During rest the use of water diminishes the weight of the body; on the contrary, during action the drinking of water is accompanied by an augmentation of the body's weight, the water being probably retained to compensate for the loss of fluids which otherwise ensues. Muscular exertion constantly diminishes the quantity of urine; during action the quantity may be reduced to two-thirds, or even one-half of the normal amount. The cause of the diminution of the quantity of the urine during action is that there is, during exercise, an increased cutaneous transpiration; hence, during exercise, the urinary excretion contains more solid materials than usual, so that in this respect muscular activity becomes an important agent in promoting renal elimination. During labour the skin and the lungs become the main excretory outlets; the excretory processes are more active at the close of the afternoon than during the forenoon. During active exercise the perspiration may be increased to threefold its usual amount; after the exercise has ceased, the perspiration is rapidly reduced or may wholly cease.

The faecal evacuations are, as a rule, less during exercise than during repose. Food of the same kind appears to be alike digested during repose or muscular activity; it is probable that the less weight of the excrements during exercise is dependent upon the want of the aqueous element. Intestinal peristalsis occurs more slowly during violent exercise. There has been observed no perceptible alteration in regard to the quantity of urea which is eliminated during active bodily exercise. Physical exercise increases to a great extent the amount of uric acid that is discharged. As the use of water diminishes the relative amount of the uric acid in urine, so free perspiration increases it. Since the perspired matter contains a considerable quantity of chloride of sodium, when the transpiration is profuse, the chloride of sodium in the urine is lessened.

All researches indicate a considerable increase of sulphuric acid in the urine during exercise. The perspiration seems to remove little or no sulphuric acid. Phosphoric acid is also considerably augmented in the urine, both during and after exercise; the quantity of this acid which is excreted during free perspiration appears less than that during diminished perspiration, hence the inference that there is a portion of phosphoric acid excreted also through the skin. . . . The quantity of the air which traverses the lungs is gradually increased from morning until evening, so that in the even-

ing, from eight to nine o'clock, the maximum is attained. Exercise very notably augments this amount; the augmentation is manifest even when the number of respirations remains the same. The quantity of carbonic acid which is eliminated is more increased than the amount of air: for example, during gentle exercise the elimination of this gas becomes double the normal standard, and during violent exercise the quantity of carbonic acid excreted is augmented to threefold the usual amount. The heat of the organism is somewhat increased by exercise, though soon after the exercise has ceased the temperature rapidly sinks, even to a point below the normal degree. The production of the perspiration appears to be accompanied with an increase of bodily heat. The lowest temperature of the body is in the morning, the highest at midday, and in the evening there occurs a diminution again.

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ART. 7.—*Precautions to be taken to prevent the Transmission of Syphilis by Vaccination.*

By M. DIDAY.

(*Edinburgh Medical Journal*, December, 1863.)

It cannot be denied that the doctrine of vaccinal syphilis makes sensible progress. It counts among its supporters eminent clinical physicians and specialists of the highest merit, and we reproduce from the *Medical Gazette* of Lyons some remarks by M. Diday upon this subject. In the first place, says M. Diday, if you have any reason to suppose that there is a trace of syphilis in the child who has been vaccinated, or in its immediate relatives, you should take no lymph from such a subject. It is, then, necessary to know whether the first child has syphilis, and to ascertain this we must look for the traces of it in the parts most commonly affected, such as the genito-anal region, the commissures of the lips, the scalp, the folds of the skin within the thighs, &c. No matter how normal the vaccine vesicle appears, M. Diday will not take lymph from it if the child's nose was habitually stuffed, if its upper incisor teeth were notched on their free border, or if the palmar and plantar epidermis did not present its ordinary resistance and coloration. The physician at the same time, without making a special examination, will look closely to the state of health of the father, mother, and nurse of the infant, and of its brothers and sisters. M. Diday then supposes the case that the child vaccinated, previously quite healthy, should have contracted syphilis by its vaccination. Under these circumstances the lesion will be primary, a chancre which will develop itself at the place of vaccination. But this chancre, according to the known law of its evolution, will scarcely appear before the cicatrization of the vaccine pustule; or, according to the observations of M. Lecoq, from the fourth day the progress of the vaccine vesicle will be irregular, and in place of a normal pustule, there will be an umbilicated pustule, speedily becoming covered with a thick crust. Accordingly

M. Diday concludes that it is necessary, 1st, To avoid taking the matter from a pustule of which the period of suppuration, though it has offered nothing else unusual, has extended beyond the tenth day; for then there is reason to fear that a chancre exists. 2nd, To avoid taking matter from a pustule which has offered any irregularity. The next thing is to examine the child to be vaccinated, for every subject vaccinated is called upon to propagate vaccination, and if the pustule contains a germ of syphilis it may be propagated to an entire population; as to infants which have the appearance of being healthy, but in whom there is the possibility of hereditary syphilis, M. Diday recommends that they should not be vaccinated till they are three months old, for it appears from the statements of this observer that, of 158 children born with the forms of hereditary syphilis, the specific symptoms manifested themselves in 146 before the third month, in 12 after that period. This does not show that if three months have elapsed in a suspected infant without the appearance of symptoms, there will be an absolute immunity, but merely that there is a sufficient probability of their non-occurrence to warrant his vaccination.

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#### ART. 8.—*Vaccination and Small-Pox.*

By MR. MARSON.

(*Proceedings of Epidemiological Society, 1864.*)

The Small-pox and Vaccination Committee of the Epidemiological Society has recently drawn up a valuable report on the amendments required in the vaccination laws. This report has been laid before the Government, and it is to be trusted that it will prove influential in bringing about the changes so greatly needed in the arrangements for public vaccination.

The Report states that three thousand two hundred and forty persons die, on an average, every year in England from small-pox. In the metropolis alone the average annual mortality from this disease exceeds seven hundred. At epidemic periods the mortality assumes much higher proportions, and in the epidemic which ravaged London last year, and has not yet quite ended, nearly two thousand five hundred lives have already been sacrificed.

The very large majority of deaths from small-pox is in young unvaccinated children; but there is, especially at epidemic periods, a considerable mortality among imperfectly vaccinated adults. Mr. Marson has informed the Committee that there were one hundred and twenty-three deaths from small-pox last year in the Small-pox Hospital in persons who had been vaccinated, but that in only three of these had the vaccination been such as all persons ought to receive for their full protection; and that while the mortality from small-pox in the hospital among the unvaccinated patients was at the rate of 47 per cent., and among the imperfectly vaccinated at the rate of 15 per cent., less than one per cent. of those admitted who had been properly vaccinated succumbed to the disease. Nothing

can, therefore, be more certain than that if all were thoroughly well vaccinated in early infancy, small-pox might be nearly banished from our death-registers.

But it should be emphatically stated that this cannot be accomplished by the mere extension of vaccination, unless means be taken at the same time to secure the more complete and effectual performance of the operation.

It appeared to the Committee to be generally agreed, and they were of opinion, that amendment in the law is especially required in the following respects:—

(1.) For enabling local authorities to have more complete information as to the vaccination of the children born in their respective localities, by improvement of the registration of vaccination. For this purpose (*a*) legal provision should be made for the registration of the vaccination in the subdistrict in which the birth was registered, and not (as now directed) in the sub-district in which the operation is performed; and (*b*) parents should be made responsible, under fine, for the registration of the vaccination of their children. The Committee, finding that these provisions form part of the Government Vaccination Bill for Scotland of last session, presume that no difficulty will occur with regard to their adoption in England. They would, however, carry their suggestions one step farther, and, repeating a recommendation which they made eleven years ago, they would represent that the Birth Register would form a much more effectual basis for the registration of vaccination, if the registration of births were made compulsory.

(2.) For enabling local authorities more readily to take proceedings against negligent parents by not requiring it to be first proved in each case that a particular form of notice was, at the time the birth was registered, delivered by the Registrar to the parents. This has been found a great obstacle in working the act; and, again, the Committee find that there is no requirement of this kind in the Vaccination Bill for Scotland.

(3.) For empowering local authorities to employ, and of course to remunerate, persons to supervise and make local inquiries into the observance of vaccination in their respective localities. The power of the local authorities, who are charged with the duties and responsibilities of the Vaccination Acts, is now limited to the appointment of persons for the purpose of taking proceedings before magistrates, and it has been ruled that even in the exercise of this limited power the words of the statute do not allow them to remunerate the persons whom they employ. It is not, therefore, at all surprising that local authorities should in few instances have taken proceedings.

(4.) For the establishment of better arrangements for the public performance of vaccination. The Committee are of opinion that it should be represented to the Government that the present arrangements are especially faulty in the following respects:—

(*a*) In large towns, by excessive subdivisions into districts, by the appointment of many public vaccinators, and by directing a

large number of attendances for the performance of vaccination—by which causes it is rendered a matter of great difficulty, and very frequently of impossibility, to maintain proper supplies of liquid lymph, and to perform public vaccination in the way in which in such towns it ought always to be performed, viz.—with well-selected lymph direct from arm to arm.

(b) In small towns and rural districts, by requiring (under the legal interpretation put by the Poor Law Board on the various provisions of 16 and 17 Vic. c. 100) a system of attendances so entirely unsuited to the circumstances of those districts that scarcely any public vaccinators feel themselves bound by the engagements to which they have subscribed; and,

(c) As consequences of the above—by the public vaccination of the kingdom being very generally carried out under no rule whatever. Whence many districts are left for long periods without any performance of public vaccination, and whence also many irregularities, very seriously prejudicial to the good vaccination of the people, together with an amount of vaccination with preserved lymph which, under any proper system of public vaccination, would not be tolerated.

On no subject connected with vaccination is there a more entire concurrence of opinion than on the superior advantages of the performance of vaccination with well-selected lymph direct from arm to arm, and the Committee are of opinion that all arrangements for public vaccination should keep this primarily in view. They recommend, therefore (a) that divisions of unions into districts, and local arrangements, should be subject to such regulations as the Lords of Her Majesty's Privy Council may make, and that power should be given to the Privy Council to make such regulations. This they regard as a necessary complement to the other powers now vested in the Council, for securing the more efficient performance of vaccination in England: and (b) that in places or districts in which, from the limited population, arm-to-arm vaccination cannot be carried on continuously, public vaccination should be carried on periodically; and that no parent residing in such districts should be liable to penalty by reason of his child remaining unvaccinated after three months from birth, until after the lapse of one of these periodical vaccinations.

The Committee, looking to the great benefits which have resulted from the Compulsory Vaccination Act even in its imperfect state, and looking to the indispensable necessity for the performance of vaccination in very early infancy in large towns on account of their frequent liability to small-pox epidemics, deprecate in the strongest possible way any general extension of the limits of age now allowed by law for the performance of vaccination; but they do not see any objection to such extension of those limits as is implied in the foregoing recommendation, in districts which are little populous, and from which epidemic small-pox is often for long periods absent. They think that this would be best provided for by vesting in the Privy Council a power to designate—either by general regulation, or on the report of one of their inspectors, or on application from



the local authorities—the districts in which public vaccination should be carried on periodically. They find it to be in accordance with precedent to confer on the central administrative authority special modifying and dispensing powers. By the Government Vaccination Bill for Scotland, the Board of Supervision are authorized to modify certain provisions of that Act, to meet the requirements of certain districts.

It appears to the Committee very inexpedient that the control of Public Vaccination should be vested in two distinct Government Boards, and they are of opinion that the powers now exercised by the Poor Law Board should be transferred to the Privy Council.

ART. 9.—*On the Bromo-Iodated and Sulphated Springs of Purton.*

By DR. ROBERT H. BAKEWELL and MR. J. C. SADLER.

(Pamphlet, 1863.)

A spring of bromo-iodated and sulphated water has recently been brought to light at Purton, a village of North Wilts, situated on the Cheltenham branch of the Great Western Railway. The medicinal value of the spring has not yet been satisfactorily determined, but we subjoin an analysis of the water, made by Dr. Voelcker, Professor of Chemistry to the Royal Agricultural College, Cirencester:—

Temperature . . . . .	58½° Fahr.
Specific gravity . . . . .	100·45
	Grains.
Iodide of Sodium . . . . .	0·066
Bromide of Magnesium . . . . .	0·092
Sulphate of Soda . . . . .	112·239
Sulphate of Magnesia . . . . .	77·208
Sulphate of Lime . . . . .	83·873
Sulphate of Potash . . . . .	1·916
Carbonate of Potash . . . . .	28·880
Chloride of Sodium . . . . .	34·297
Oxide of Iron, Alumina, with traces of Phosphoric Acid . . . . .	0·280
Soluble Silica . . . . .	1·280
Organic matter and water in combination . . . . .	8·750
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Total solid residue per imperial gallon	348·881
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Free Carbonic Acid . . . . .	cubic inches 50·4
Sulphuretted Hydrogen. . . . .	a trace

# ART. 10.—*On the Medicinal Use of Arsenicated Mineral Waters.*

By Dr. GEORGE ROBINSON.

(*Lancet*, August 1, 1863.)

A recent number of the *Edinburgh Philosophical Journal* contains a paper by Dr. John Davy "On the question, Is Oxide of Arsenic, long used in a very small quantity, injurious to Man?" The paper was founded chiefly on the facts observed in reference to the arsenical water of Whitbeck, in Cumberland. Dr. Robinson accompanied Dr. Davy in one of his visits to this stream, and being well acquainted with the district, he submits to the profession another question—namely, *Whether a natural combination of arsenic, such as that occurring at Whitbeck, will not in many cases be found a more efficacious therapeutic agent than any artificial solution of arsenical compounds?*

While fully admitting that the whole subject of the physiological action and medicinal employment of this powerful substance requires careful and extended investigation, there cannot be, Dr. Robinson thinks, any doubt that in many chronic intractable diseases arsenic is one of the most potent remedies at our command. "All writers on diseases of the skin," he says, "bear concurrent testimony to its value in the treatment of lepra, eczema, and other still more loathsome forms of cutaneous disease, and one in particular lauds its 'almost omnipotent influence' over the non syphilitic forms of the malady, ascribing its occasional failure to *the exhibition of the remedy in too large doses, and at intervals too distant.*"

"Mr. Erasmus Wilson, in treating of lepra, says that he places the greatest reliance on arsenical preparations; but, in ordering the artificial solutions of this metal, admits the necessity of explaining to the patient the symptoms which call for the suspension or omission of the medicine, and alludes to the precautions requisite to guard against irritation of the stomach by its ingestion. And in the most recent contribution on this subject, the lectures of Dr. McCall Anderson, the same homage is paid to the superior efficacy of arsenic in the treatment of eczema. As regards this class of complaints, I believe that the experience of most practitioners is to the same effect. But there is another very extensive group of disorders in which arsenic has been very little employed, although it combines in itself the two therapeutic actions most essential to the patient's recovery—namely, an alterative and a tonic effect. I allude to those numerous cases in which there is a tendency to cachexia or dyscrasia accompanying, and possibly dependent on, a congested, torpid state of the liver and portal venous system; and one of the most obstinate and distressing varieties of this disorder is that in which mental depression, ranging from slight hypochondriasis to confirmed melancholia, accompanies the bodily disease, many instances of which have fallen under my own notice. These patients are at present often sent to some of the sulphuretted mineral waters, and derive a certain amount of benefit from their use. But I believe that arsenical waters given

under the same conditions would be infinitely more effectual, the eliminative and alterative effect exercised being much greater in the one case than in the other, to say nothing of the specific action of arsenic upon the nervous system."

In brief, Dr. Robinson submits that in these and many other diseases where the administration of arsenic is indicated, that this remedy may be most safely, effectually, and pleasantly given, as found in arsenicated mineral waters.

### ART. 11.—*On the Climate of the Swiss Alps.*

By Dr. HERMANN WEBER.

(*Dublin Quarterly Journal of Medical Science*, February, 1864.)

The following is a summary of an able examination by Dr. Weber, of the meteorology, and physiological, pathological, and therapeutical influence of the Swiss Alps:—

1. The *temperature* is lower; it decreases in proportion to the increasing elevation at the average rate of 1° centigrade (1·8° F.) for every 544 feet. The annual and monthly variations are less great on elevated places than in plains.

2. The *atmospheric pressure* decreases, or the air becomes thinner with the increasing height.

3. The *absolute amount of humidity* in the air becomes probably less with the increasing elevation; but the *relative amount*, or the degree of saturation, is, in general, greater in the lower mountainous regions—viz., from about 1,500 to about 4,000 or 5,000 feet high—than in the plains; while in the highest regions—viz., above 6,000 and 7,000 feet—the absolute and relative degrees of humidity are diminished.

4. The *rapidity of evaporation* is increased in the higher mountainous regions.

5. The *motion in the atmosphere* is considerably greater on the mountains than in the plains. There are, however, great variations, depending on local circumstances, in addition to the peculiarities more or less common to the whole district of the Swiss Alps ("mountain" and "valley currents;" "Föhn").

6. There are more thunder-storms in the lower mountainous regions of Switzerland than either in the higher regions or in the plains. There is a greater amount of positive electricity in the air on the top of mountains than in lower regions.

7. The air of the higher regions of Switzerland is free from marsh malaria; the amount of ozone is probably greater on mountains than in valleys and plains.

8. The sky is, in the Sub-Alpine regions, more frequently dull by mists and clouds than either in the plains or higher Alpine regions.

9. The degree of insolation or exposure to the rays of the sun is greater on elevated situations.

Concerning *the physiological influence* of the mountainous climates on the visitor, we may assume:—

10. That the respiratory movements become increased in frequency and depth, with increasing elevation, there being no exact experience with regard to the amount of oxygen inhaled and carbonic acid and water exhaled.

11. The contractions of the heart become more frequent in proportion to the elevation.

12. The appetite becomes increased; the thirst is likewise, in general, augmented.

13. The sanguification is improved.

14. The nervous system becomes invigorated, the sleep, in general, more healthy.

15. The activity and energy of the muscular system become increased.

16. The secretion of the skin is most likely augmented.

17. The urine appears to be not materially altered in quantity; the amount of solids being probably slightly increased.

18. The metamorphosis of tissues is, we may infer, accelerated.

With regard to the *pathological character* of the Swiss Alpine climate, it has been shown that:—

19. The prevalent diseases are the inflammatory affections of the respiratory organs, and their results, chronic catarrh, emphysema, and asthma: goitre and cretinism, and scrofulous complaints; rheumatic affections and diseases of the heart; which affections are, to some degree, due to the unfavourable hygienic conditions in which most of the inhabitants of the Swiss mountains live, while others are dependent upon the meteorological peculiarities of the climate, and especially the unfavourable influences prevalent during the cold seasons.

20. It has further been shown that in the true Alpine regions tubercular consumption is extremely rare, as also cretinism; and that on the whole, with the increasing elevation, the following affections become much less frequent:—ague, acute diseases of the liver, hemorrhoids, diarrhœa and dysentery, yellow fever, and cholera.

21. The *beneficial influence* of the mountain climate is especially felt in various forms of dyspepsia and dyspeptic hypochondriasis, in the atonic diarrhœa, anemia, and want of tone, observed in people returning from hot climates; in the cachexia, with or without splenic tumour, caused by marsh malaria; in the various forms of anemia, chlorosis and hydremia, not dependent upon serious organic disease; in scrofulous complaints; in the tendency to tuberculosis, and in its first stage, especially in the higher regions, while in the slightly advanced forms some of the lower and more sheltered situations only ought to be resorted to; in chronic bronchial catarrh with abundant secretion. Sleeplessness, hysterical and neuralgic affections, as also hypochondriasis, are often removed by a stay on the Alps.

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ART. 12.—*Surat Cotton as it Bodily affects Operatives in Cotton Mills.*

By Mr. JESSE LEACH.

(*Lancet*, December 5, 1863.)

In the recent inquiry conducted by Dr. Greenhow, under the direction of the Medical Department of the Privy Council, into the causes of the excessive adult mortality observed from lung diseases in certain districts of England, the author points out, that the large amount of dust and flue which escape into the atmosphere of the workrooms, during the process of manufacturing cotton, particularly the carding of the material, exercises a prejudicial influence over the health. To the mechanical irritation of the lungs from this source, he attributes largely the inordinate mortality from pulmonary affections which occur in the great centres of the cotton manufacture. The quantity of dust depends to some extent upon the quality of cotton in process of manufacture, and the evils of inhaling an atmosphere laden with the *débris* of the material, are aggravated by the imperfect ventilation of the workrooms, which too commonly obtains.

Mr. Leach, one of the certifying Surgeons of Factories, at Heywood, in Lancashire, gives an instructive account of the influence of the manufacture of Surat cotton upon the operatives:—

“It is necessary,” he writes, “to say a few words on the cotton staple to correctly estimate the amount of dust in different samples of cotton. Whatever name it bears, much loss is sustained during the processes of manufacture: the American the least; the East Indian or Surat the most. Twenty-five per cent. is an average loss during the manufacture of Surat. The greater amount of loss sustained the more damaging to the constitutions of the operatives employed. The higher the rooms of a mill and the better their ventilation, the more harmless to the health of the workers; the lower the rooms of a mill and the more imperfect their ventilation, the greater the amount and extent of bodily sufferings of the mill operatives. The following remarks more particularly apply to operatives working in low, narrow, ill-ventilated rooms, where Surat cotton is used.

The first process the raw cotton undergoes is the mixing of one staple with other. Much dirt and dust is disengaged in this operation. The respiration is affected from the dust irritating the respiratory passages of the mixers, and coughing and sneezing are the frequent consequences, which disengage from the bronchial membrane a quantity of slaty-coloured expectoration, which, when placed under the microscope, is seen to consist of very fine short fibres of cotton in air-bubbles and mucus. The sneezing is occasioned by the same material irritating the olfactory nerves during nasal breathing. The arms and hands of mixers are not unfrequently affected with a cutaneous rash, much resembling nettle rash. This may partly arise from fine sand and short fibres of cotton destroying the epi-

dermis, and irritating by their presence the true skin. Their complexion is pale and sickly. After passing from the mixers, the cotton passes through the hands of the willowers and scutchers. When ventilation is not assisted by ventilating chimneys of tin or wood, which take off more effectually the dense atmosphere with which these rooms are charged, the willowers and scutchers suffer in the same manner as the cotton mixers. From the immense velocity of the machines used, the revolutions being 1500 per minute, the quantity of short fibres of cotton set afloat in these rooms is very great. It would be difficult to recognise a man at twelve yards' distance, from the density of floating fibres, modified, of course, very much by a wet or dry day. The strippers, grinders, and card-room hands are engaged in the next process of cotton manufacture. They mostly suffer from a spasmodic cough, sore-throat, expectoration of blood, pneumonia, and confirmed asthma, with oppression of the chest. Various expedients are resorted to to liberate the small cotton fibres by expectoration from the pulmonary air-cells: tobacco-chewing, the use of gin, and smoking out of the mill are very commonly habitual. The teetotalers use tea and coffee in lieu of these for the same purpose. A carder seldom lives in a card-room beyond forty years of age; many have to give up working much younger. Forty-five to fifty years are their average ages. The next room the cotton comes to is the drawing and roving room. Drawers and rovers suffer very little from the small floating cotton fibre. The tonsils are sometimes enlarged, and the pharynx and larynx much injected. They suffer so little inconvenience from these conditions that an ocular demonstration is necessary to convince oneself of their presence. There is comparatively much less floating short cotton fibres in these and the next rooms. The mule and throstle rooms are the next, where cotton assumes the cotton-thread. Their temperature is much higher, ranging from 75° to 90° Fahr. The light is freely admitted through numerous lofty windows. A high temperature and much light are requisite for the spinning of the cotton-thread. The hands in these rooms look pale and sickly; but are lively, cheerful, and active. They suffer much from facial tic and toothache, slight colds, and sore-throat, during cold and damp weather, probably arising from their sudden transition from the heated atmosphere in which they work to a raw cold one outside the mill on their way to and from their meals. The next class of workers are the packers occupied in the warehouses. They are generally very healthy, active, and much better looking. These rooms are of a moderate temperature, and very well ventilated, which account for the improved appearance and general health of the men employed therein.

"I have now passed through the general affections of operatives engaged in the various processes necessary to produce the cotton-thread from Surat cotton, and shown, as I trust, plainly that these affections arise in a great measure from the circumstance that Surat cotton has a much shorter fibre than any other kind of cotton; that its manufacture involves on an average twenty-five per cent. of loss to the spinners; that the teeth of the machines through which it

has to be passed are of necessity set closer for the better working of it; and that the health of the operatives employed suffers much more, from its short fibres irritating the epithelial mucous surfaces of the air-passages during inspiration, whether nasal or vocal; and that the only remedy is more effectual ventilation in the mixing, scutching, carding, and drawing rooms. Beyond these rooms I have not observed a greater amount of suffering than from working any other class of cotton. Lastly, whatever principle of ventilation be adopted, the lightness and shortness of the fibre of Surat cotton are so remarkable that a much greater loss than twenty-five per cent. would be observable if increased ventilation be much applied; but this loss would be amply compensated for by a better quality of cotton thread, bearing an increased marketable value. Many wealthy manufacturers, compelled to use Surat cotton since the cotton famine, have applied increased ventilation to free the mixing and scutching rooms from the additional dust attending its use, and have at considerable expense brought into use powerful fans, more elevated rooms, and other appliances; and in every instance the factory operatives enjoy comparative impunity from what remains of the floating dust. The use of better gins would free the raw cotton of Surat from much of its present dirt, and our East Indian authorities possess the power of enforcing them, which would enhance the value of the cotton, and confer an inestimable boon on the Lancashire hive of wealth and industry."

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ART. 13.—*Influence of London Cowhouses on the  
Public Health.*

By Dr. BUCHANAN.

(*Lancet*, December 12, 1863.)

In a recently published report of Dr. Buchanan, the Medical Officer of Health for the St. Giles's district, on the sanitary condition of that district in 1862, an interesting and instructive illustration is given of the influence exercised by London cowhouses on the public health. The Amended Act, 25 and 26 Vict. (cap. cii., s. 93), passed in the year 1862, gives to justices of the peace power to license places to be used as cowhouses in the metropolis. It provides also that district boards may show cause against the granting of such licence. The Board of Works of St. Giles's sought to give effect to this provision, and opposed the granting of any licences to cowhouses within their district. Not satisfied to rest their opposition upon general arguments on the physical injury inflicted upon the inhabitants of crowded neighbourhoods by the presence of cowhouses, the mortuary statistics of a particular locality within their own district, and contiguous to a cowhouse, were subjected to examination. Stacey-street is situated in the most densely populated and most unhealthy part of St. Giles's. On the north side of the street, between New Compton-street and Lloyd's-court, are ten dwelling-houses. Towards the western extremity of the street, and in the

rear of the houses numbered 7, 8, and 9, are a series of cowsheds. The mortuary statistics of Stacey-street extend over six years. From these it was ascertained that, "three houses excepted, there had been an average of three deaths in each inhabited house, and in none a higher mortality than six in six years. But in the three houses, Nos. 6, 7, and 9, there had been an average mortality of *ten* deaths each—viz.: in No. 6, *seven* deaths; in No. 9, *nine* deaths; and in No. 7, actually *fourteen* deaths." Now, No. 7 was the house most directly connected with the cowsheds; Nos. 6 and 9 were the two houses flanking them; and No. 8 consisted only of workshops and the entrance to the cowyard. In the three houses, Nos. 6, 7, and 9, *thirty* deaths occurred: while the other inhabited houses in the street, numbering fourteen altogether, had but *forty* deaths between them. "The only two fever deaths in the street were in the houses abutting on the cowyard. Three out of five deaths from diarrhoea occurred in them. Out of ten deaths from acute lung diseases, which follow (as has often been shown) the zymotic diseases in their distribution, and depend upon similar impurity of air, eight took place in these three houses."

No attempt was made to estimate the influence exercised by any other cowhouse on the health of the people living in the vicinity. "But on the strength of the facts here ascertained," writes Dr. Buchanan, "the reply was not difficult to the question of the counsel who had been retained in the interests of these nuisances—'Do you mean to say that a cowhouse and yard are more detrimental to the health of a neighbourhood than if the same space were covered with poor houses?' 'Yes, it is positively so!'"

#### (B) CONCERNING ACUTE DISEASES.

##### ART. 14.—*On the Use of Alcoholic Stimulants in Typhus Fever.*

By Dr. W. T. GAIRDNER.

(*Lancet*, March 12, 1864.)

Dr. Gairdner raises the question of the practical limits of the administration of stimulants in typhus fever. He endeavours to show:—

"1st. That it is possible to reduce the mortality of typhus fever, while withholding a large proportion of the amount of alcoholic stimulants usually given. 2ndly. That this diminution of mortality may take place at all ages, but is most marked amongst the young. 3rdly. That while at all ages the administration of stimulants ought to be strictly guarded, as likely to prove injurious when in excess, it is demonstrable that young and temperate persons may be advantageously treated—*i.e.* treated with a diminished mortality—*without one drop of wine or spirits being given from beginning to end of the fever, except in the rarest casualties.* 4thly. That the principle of



giving stimulants *as a matter of routine*, in typhus—*i.e.* at a certain stage of the disease, with but little regard to individual peculiarities—ought to be at once abandoned. 5thly. That an approximation can be made to a more correct doctrine on the subject, though further researches are still required. 6thly. That there is reason to think that in most hospitals, as well as in private practice, a very large needless expenditure is incurred through neglect of these facts—a consideration which, though secondary in importance to others, is by no means to be set aside as irrelevant.”

The facts from which he attempts to prove these positions are—1, the cases treated by himself, or under his immediate superintendence, in the Glasgow Fever Hospital, since the middle of November, 1862; 2, the entire aggregate of cases treated in the years 1861 and 1862, these years being selected merely as being the nearest in point of time to his own appointment as physician, though only to a very slight extent (in the end of 1862) influenced by his own practice, and therefore in all probability fairly representative of the existing state of opinion and practice in Glasgow. He adds, that nothing in his experience leads him to believe that the practice in Glasgow is materially different from that usual in Edinburgh, or in Scotland generally, in this respect; while he is fully convinced that the tendency to what he regards as an excess is far greater in London, and probably in many parts of England, than it is in either Edinburgh or Glasgow.

Dr. Gairdner divides the cases treated by himself into three series, which he tabulates; but he remarks that the numbers in these series are probably too small, separately considered, to give a secure basis for numerical analysis. The results of Dr. Gairdner's cases, together with other data quoted by him, are briefly summed up thus:—

	Per Cent.
Rate of mortality of 595 cases in Table I., without selection and without exclusion . . . . .	11·93
Average rate in London Fever Hospital* . . . . .	20·89
The same, with exclusion of cases dying in less than 48 hours . . . . .	17·94
Rates in Edinburgh epidemic of 1847-8 . . . . .	20·6 to 24·72
In Barony Parish Hospital, Glasgow, in the same epidemic . . . . .	17·23
In Glasgow Infirmary, 1843-53 . . . . .	18·00
In the same, 1857-61 . . . . .	16·83
In the same, 1861 (Table III.) . . . . .	18·86
In the same, 1862 (Table III.) . . . . .	16·92
In King's College Hospital, under Dr. Todd (approximative) . . . . .	25·00

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\* “Treatise on Continued Fever,” 1862, p. 218. I think it desirable here to guard against the conclusion, which might possibly be inferred from the reference to these averages in this paper, that the practice, either in London or Glasgow, has been throughout upon a high scale of stimulation. I wish these numbers to be received merely as the result of the largest available collection of data for estimating the habitual mortality of typhus fever in hospital practice, under every variety of treatment.

Taking the cases of the young alone, as opposed to the adult population :—

Rate of mortality of 189 unselected cases in Table I.,			
(inappreciably small, but say) . . . .			
Rate in Glasgow Fever Hospital, 1861 . . . .			1·0
Ditto ditto 1862 . . . .			3·2
Ditto ditto 1862 . . . .			3·6
Ditto ditto 1847 . . . .			5·0
Rate in London Fever Hospital during 10 years . .			6·2
Rate in King's College Hospital, under Dr. Todd,			
possibly about . . . . .			17·0

"Taking the adults alone," Dr. Gairdner continues, "the differences in the rates of mortality are, of course, much less striking, but are still in favour of Table I., which gives an average rate of 17·2 per cent., as compared with 24 per cent. in the Glasgow Fever Hospital in 1861-62.

"I have now to refer to Table IV., in evidence that these very favourable results have been attained with a much smaller amount of stimulation than has been usual of late in Glasgow, or even in my own previous practice in the Edinburgh Infirmary. The figures in the table, indeed, speak so plainly upon this point that it would scarcely be necessary to make any remarks upon them, were it not that the subject is one of such vast importance, and that all numerical data, unexplained, are liable to a certain extent to misconstruction. I desire, then, that it should be very clearly understood that there is no evidence whatever in these numerical data of anything that can be called special profusion in the use of alcoholic stimulants in Glasgow as compared with other places. On the contrary, I have a strong conviction, based upon facts which, though not capable of being numerically stated, leave me in little doubt, personally, that both in London and Edinburgh (but especially in the former) the habitual administration of alcoholic stimulants in hospital practice has been at a higher rate than in Glasgow; and I am also well assured, from detailed examination of the facts, that my own rate of administration in Edinburgh, even when at the highest, was decidedly less than that of some of my colleagues. On the other hand, the comparative moderation of the Glasgow annual averages leaves room for considerable individual varieties of practice; and here, too, it is quite plain to me that the excesses of some physicians are compensated in a great degree by the moderation of others.

"With these explanatory remarks, I would now direct special attention to the averages of the third series of my own cases, as recorded in the accompanying Table.

"It is possible, indeed, that this average may in the end turn out to be practically *too low* to meet the requirements of the severest types of epidemic typhus; but I am very sure that the cases to which these numbers apply were of quite average severity, according to my previous experience of typhus fever. It is true that during several years in Edinburgh, in which my numerical averages show a greater consumption of alcoholic liquors, the fever was much milder, and even less fatal than in Glasgow in 1862-63; but I have

now a most assured conviction, founded on careful observation of details which can hardly be stated here, but have been referred to elsewhere, that the fever of that period was quite *exceptionally* mild; and I am now equally convinced that to whatever extent I gave stimulants greatly in excess of my present practice at the period referred to, they were misapplied and wasted, if not indeed in part ordered and used without my knowledge of the fact. At all events, it is quite certain that in typhus fever by no means exceptionally mild, treated with a daily average of spirits not much more than half, and of wine less than the eleventh part of the quantity administered over the entire fever hospital in 1861-62, a rate of mortality was attained of not more than 10 per cent. Or, to put the result into the form of larger figures, the facts are as follow:—Between August 3rd and December 7th, 1863, there were treated 135 males and 134 females affected with typhus fever, being a total of 269 cases treated to a termination in my wards. Of these cases 27 died, being at the rate of 10 per cent. During the whole course of the treatment the 269 cases consumed 633 oz. of port wine and 666 oz. of whisky, or at the rate of about  $2\frac{1}{2}$  oz. of wine and  $2\frac{1}{2}$  oz. of spirits on an average to each patient, as the allowance for his entire period of residence, which, on an average, was  $20\frac{1}{2}$  days.

*Averages of Wine and Spirits employed in Glasgow and Edinburgh Fever Wards, showing the quantity (in ounces) ordered for each patient in twenty-four hours, at the periods and under the circumstances mentioned below.*

	Ounces per Patient ordered in 24 hours.	
	Wine.	Spirits.
Average of five years in Edinburgh (Dr. G.)	1·314	0·137
Maximum—Average of year 1848 (Dr. G.)	1·734	0·346
Minimum—Average of year 1856 (Dr. G.)	0·715	0·069
1st and 2nd Series (Table I.), (Dr. G.) . .	0·261	0·214
3rd Series (Table I.), (Dr. G.) . . . .	0·115	0·121
Two years in Glasgow Fever Hospital (Table III.), (various physicians) . . .	1·304	0·229

“On the other hand, in the Glasgow Fever Hospital, during the years 1861 and 1862 taken together, there were 1837 cases under treatment, although only 1694 of these were treated to a termination during the period assigned, and only 1289 were typhus. There were consumed in the two years 62,754 oz. of wine, 8440 oz. of whisky, and 2611 oz. of brandy. Adding the two last sums together and dividing by the number of patients, we find that each patient consumed, on an average, more than 34 oz. of wine and 6 oz. of spirits. But, as much the largest proportion of this quantity was probably given to the 1289 cases of typhus, it is probable that the

real average quantity consumed by the typhus cases may have been not less than 40 oz. of wine and 7 oz. of spirits, which would be nearly sixteen times as much wine and three times as much spirits as was given to the cases in the third series above referred to. With this much larger consumption of alcoholic stimulants, the mortality of typhus was no less than  $17\frac{1}{2}$  per cent. in these two years, while under the lesser amount of stimulants it was only 10 per cent.

"It will not fail to be apparent to all persons accustomed to the use of averages, but may, nevertheless, require explanation to some readers of this paper, that the figures in the Table (p. 28) give no true indication of the actual amount of stimulants usually prescribed incases supposed to require them. The numbers show merely the most general results of treatment, and cannot be trusted for guidance in the details of particular cases. Thus, the low averages in my own cases of the third series undoubtedly depend much more on the fact, that at least nine-tenths of those treated had no stimulants at all, than on the restricted quantities given to those who were considered to require stimulation. In fact, the small minority (less than one-tenth, but including all the fatal cases,) who received stimulants, had them administered in very considerable quantities, as will appear from the following calculation:—Let us suppose (for I have no exact figure to give upon this point) that each case to which stimulants were administered had them during one-third of the period in hospital; it will then be necessary to multiply the daily average of the whole cases by thirty (*i.e.*,  $10 \times 3$ ) to find the quantity given to each individual of those who took stimulants (one case in ten) during each day in which stimulants were prescribed to him (one day in three). This would give, as the average daily quantity inscribed in the wine and spirit roll, not less than 3.45 oz. of wine and 3.63 oz. of spirits to each name on the books at one time; and as some must have had much more than this quantity, while others had less, it will be plain to every one that in cases really appearing to me, or to my assistants, to require stimulants, the quantities usually prescribed were by no means insignificant. A like qualification, of course, applies to all the other averages recorded in the Table (p. 28), with the difference that in some of the cases referred to, the proportion treated without stimulants was much lower than in my cases.

"It is plainly inexpedient to attempt to establish any fixed rule for the administration of stimulants upon a numerical basis, and it may be safely asserted that such a rule, if established by authority, would be set up only to be broken. But it is a consideration of no small importance, that if it should appear hereafter that typhus can be usually treated with an amount of stimulants nearly such as I have here indicated, the saving to our hospitals would be about a bottle and a half of wine, and more than three ounces of spirits, in each case of typhus fever. I do not wish, however, to press this view of the subject, which is plainly of a subordinate importance to the question of a sound and successful treatment.

"Having regard to the fallacies inherent in all very dogmatic statements upon a question such as that of the treatment of typhus fever by alcoholic stimulants, I am content if the reader follows me

on this occasion so far as to admit that a fair presumption has been established in favour of a considerable reduction in the quantities at present habitually employed. In other words, I hold it as proved that such a reduction may be effected without any detriment to the safety and success of the treatment; and further, I regard it as very probable, that the general mortality of typhus will be lessened exactly in proportion as the routine of a vicious and excessive stimulation is abandoned in favour of a judicious and careful system of treatment by all the other means known to physicians. But in regard to the case of young persons, and especially persons below the age of puberty, when affected with typhus, I think the facts before me warrant a much stronger and firmer position than this. I have long been convinced, in fact, by carefully watched experience of individual cases, that in persons of immature age, and of temperate habits, stimulants should very rarely be administered, except in minute and experimental doses, rather as tonics than as stimulants in the proper sense of the term; and, possibly, in some very extreme cases of collapse, in more considerable quantities; but not even then with any approach to intoxicating quantities. In typhus fever, I am now well assured that this view is well founded, for I have to record the fact, that the treatment which gave only one fatal case in 189 young persons was a treatment from which stimulants were practically excluded, the only patient who had a little wine being a child with cancrum oris, with great debility of the stomach, long after the fever had run its course. Looking at the results of this practice beside some of those formerly indicated, and especially looking to the rise in the rate of mortality amongst the young in typhus fever, in proportion as there seems reason to believe that the practice has leaned to a routine of stimulation, I confess I am strongly persuaded that *to the young, in typhus, and very probably in most other fevers, stimulants are not less than actively poisonous and destructive*, unless administered with the most extreme caution, and in the most special and critical circumstances. Had my 189 cases of young persons died at the rate even of those in the Glasgow Fever Hospital in 1861 and in 1862, the deaths, instead of one, would have been six or seven; had they died at the rate of the Glasgow epidemic of 1847, which, however, I admit to have been a more severe epidemic than the present, the mortality would not have been less than nine; at the rate of the London Fever Hospital it would have been nearly twelve; while, in the hands of Dr. Todd, under a routine of such extreme stimulation as is indicated in his book on acute disease, it seems probable that instead of *one death* in the 189 cases, there must have been no fewer than thirty to thirty-five!

"I trust it will not be supposed from anything I have written above, that the views which I wish to suggest have anything in common with those of the *depletion and starvation* school of physicians, or such as condemn the use of stimulants, *in toto*, in fevers, from the idea that they tend to 'excite the circulation.' With this school of physic neither my own personal opinions, nor my actual practice, have anything in common. I do not deprecate the excessive use of

stimulants on account of their tendency to 'excite the circulation,' nor do I advocate the use of depletion or of starvation as a corollary to the doctrine of lessened stimulation; on the contrary, the whole aim of the practice I adopt in fevers is what is commonly called 'supporting the strength;' and the objection that I entertain to the use of stimulants in excess, or upon the plan systematically advocated by the late Dr. Todd, is, that so given, they do not support the strength, but rather poison the system, by loading the blood with material which is inconvertible into blood or tissue, and which arrests or interferes with the vital changes necessary to preserve the balance of waste and supply. The essential questions, however, connected with this subject, are foreign to the plan of the present communication, and I only advert to them in order to draw a sharp line of distinction between the objections I entertain to excessive stimulation in fevers, and the practice so common a quarter of a century ago, of encountering the febrile excitement by depressing remedies, and by starvation or extreme restriction of the diet. I can well believe, therefore, that Dr. Alison, and after him Drs. Graves and Stokes, in introducing a 'supporting' practice in fevers, in opposition to the depleting practice formerly followed, initiated a great improvement and saved the lives of a great many of their patients. The only question with me is how to secure the advantages of a 'supporting' practice, without at the same time running a risk of poisoning the blood with repeated doses of alcohol, given without due observation of the effect of each dose, and so as to interfere with the real nutrition of the system, rather than to promote it. That all routine methods of administration tend to this abuse I have satisfied myself by careful observation both of my own practice and that of others whom I have met in consultation and otherwise; and believing, as I do, that such a tendency to excess exists, I venture to ask the assistance of my medical brethren towards a fair and calm consideration of this great question."

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ART. 15.—*Are the Rose Spots of Typhoid Fever always  
Diagnostic of that Affection?*

By Dr. HENRY KENNEDY.

(*Lancet*, Dec. 23, 1863.)

The three following cases are of some importance as bearing on this question:—

CASE 1.—Mr. C—, aged twenty-three years, admitted into my ward of Sir Patrick Dun's Hospital on the evening of the 15th of November last. In my absence he was then seen by my colleague, Dr. Moore. The next day I had also the assistance of Dr. Burke, one of the physicians of Steevens's Hospital, who had been attending the patient previously with Mr. White, of Henry Street. I was informed that the patient had but just recovered from a severe attack of scarlatina, when he was seized with all the symptoms of enteric fever, attended by sharp purging, and followed in a few days by a well-marked crop of rose-coloured spots, which were

confined to the chest and abdomen. *The statement was made without any inquiry on my part*; and Dr. Burke further remarked that as the spots disappeared, the pain, which had been localized, seemed to become general, and so acute that he had been induced to treat the case for peritonitis, by leeching, &c. It is enough to add that matters went from bad to worse, and that the patient died on the fifth day from his admission to the hospital, having had great tympanitis, with pain diffused over the entire abdomen, and constant vomiting of a dark-green fluid, which was in much greater quantity than was swallowed. The diarrhœa, however, had entirely ceased. He died about the twelfth day from the onset of the fever. On examination after death, the results of acute peritonitis were found, with rather more than a pint of liquid effusion. There was no perforation, and all the lower part of the ileum, which was carefully examined, presented the normal appearance.

CASE 2.—Mr. —, aged twenty-seven, admitted into my ward Nov. 12th. He had been under my care from the beginning of his illness, which commenced with the ordinary symptoms of fever. His tongue shortly became red and furred; eyes injected; sleep quite broken, and with a tendency to vomiting. The depression, too, was very great, and he complained much of severe pains through his limbs. I had been watching closely for any appearance of spots, and on the fourth day from admission, being now eleven days ill, I found three distinct rose-coloured ones on the sides of the chest. The day after they had increased to eleven, some of these being on the abdomen. At this period I brought my colleague, Dr. Moore, to see them, and he confirmed what has been stated. It is enough to add of this case, that there was no other symptom of typhoid fever, neither diarrhœa, tympany, nor pain on pressure. His recovery was delayed, however, by a slight attack of diphtheria, which I have also met in other cases of fever. The spots had disappeared by the fifth day from their first appearance.

CASE 3.—Mrs. —, a young married woman, admitted into my ward Nov. 19th, labouring under fever, of which she had been ill at least sixteen days, though not all that time in bed. Besides the usual symptoms she had a very rapid pulse, above 130, and extensive bronchitis through both lungs. Her eyes were much injected, and there was slight delirium, especially at night. The tongue was that of typhus. The lung affection required special treatment. On the third day from admission she presented a well-marked crop of rose-coloured spots, confined to the sides of the chest and abdomen, and fifteen in number; but she had no other symptom of typhoid fever—no pain on pressure, no tympany, nor diarrhœa. About the twenty-fourth day of the fever the crisis began by sweating, which, though not profuse, lasted three days, after which she made a rapid recovery. The case was sent in by Dr. Sinclair, and was seen, when the spots were at their height, by Dr. Moore.

“These three cases,” says Dr. Kennedy, “which all occurred in November, 1863, appear to me very important. I had seen similar cases in former years, and stated so in my paper brought before the Royal Medical and Chirurgical Society of London in May, 1860. They appear to my mind to strike at the very foundation of the views held in London and elsewhere, as connecting the rose-coloured spots, and in small numbers on the chest and abdomen, with an enteric lesion; for, beyond any question, nothing of this kind existed here, and yet the spots might, in the two last cases, be taken as models. I am not quite sure but that similar cases have been described by others, though I cannot refer to them now. With my

own views these cases admit of the easiest explanation. But I must leave it to the gentlemen who hold for a plurality of poisons to explain them on theirs."

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# ART. 16.—*Case of Pyæmia Simulating Enteric Fever.*

By Dr. CHARLES MURCHISON.

(*Medical Times and Gazette*, March 19, 1864.)

The following instructive and suggestive case is recorded by Dr. Murchison:—

CASE.—Henry A., aged eighteen, was sent to the London Fever Hospital, as a case of "fever," on November 22, 1863. His history and symptoms on admission bore a close resemblance to those of enteric fever. He had been ill about nine days; he had suffered much from diarrhoea before admission, and a few hours after coming to the hospital he passed a light, watery motion. The abdomen was tense and tympanitic, and there was considerable tenderness on pressure over the cæcum. The tongue was red and fissured, with the papillæ rather enlarged, and there was occasionally a circumscribed pink flush on both cheeks. Pulse 120; no headache or delirium; pupils dilated. Still, neither on admission nor at any time subsequently, was an eruption discovered on the skin resembling that either of typhus or of enteric fever. On the other hand, from the first day that the patient came under observation the respirations were quickened—36 in the minute; there was a dry cough, and there was slight dulness, deficient breathing, and diminished vocal resonance at the base of the left lung, extending as high as the lower angle of the scapula behind, and as high as the nipple in front.

The diarrhoea ceased on the day of admission into hospital, and after a few days the motions were found to be solid, but the tympanitis and abdominal tenderness continued, and the patient had sleepless nights with some delirium, necessitating a recourse to opiates.

On the 25th, he began to complain of great pain in all the joints, increased by the slightest movement, but no swelling could be discovered, and there had been no rigors. The pain was particularly marked in both hip-joints when the patient was made to sit up in bed.

On the 26th, there was an erythematous blush on the knuckles of the right hand.

On the 29th, a similar redness, with great tenderness, was noticed on the dorsum of both big toes, and on the following day half an ounce of pus was let out by incision from beneath the skin over the dorsum of the left big toe. A dirty discharge continued to escape from the wound, which had an unhealthy appearance.

On December 3rd, a soft, fluctuating swelling made its appearance somewhat suddenly, over the middle of the sternum. It was circular and nearly two inches in diameter, and the skin over it was moderately red. The remarkable circumstance, however, was that this swelling indicated most distinctly each impulse of the heart, and was rendered tense by coughing. Very little air could be heard entering the base of the left lung below the left nipple in front and the lower angle of the scapula posteriorly, and pleural friction was heard over the dull space in the axillary region. At first sight, the pulsating swelling, in connexion with the dulness at the base of the left lung, suggested the idea of a pulsating empyema; but there was no



bulging of the left ribs, the intercostal depressions were equally marked on both sides, and there was no displacement of the heart's apex. Pulse, 104; respirations, 36. On the following day, the swelling had increased in size, and was very tender; its pulsating character was even more strongly marked than before. A small trocar was now introduced into the swelling, and about six drachms of laudable pus, not at all fetid, let out. No more could be obtained, although the patient was turned on his right side. The pain, redness, and pulsation subsided at once with the disappearance of the swelling. Poultices were applied; but the opening closed up, and by the end of twenty-four hours the swelling had returned with its former characters, and with such an amount of pain and dyspnoea, that a free incision was made into it, and about an ounce of bloody pus let out.

On December 16th, there was still much distress in breathing. Pulse, 108; respirations, 40. A thin sero-purulent discharge escaped from the wound, which was not increased by turning the patient on either side. During respiration the air passed inwards and outwards through the wound. On introducing a probe, it passed completely through the sternum by a channel surrounded on all sides by bare bone. When the probe was left in, it moved upwards and downwards synchronously with the action of the heart. At the situation of the opening, the lower third of the sternum was separated from the upper two-thirds, and the two pieces of bone could be made to move upon one another with a grating noise.

Considerable relief was obtained from the free exhibition of opiates and stimulants, but on December 11th the patient appeared much worse. He had become very emaciated. There was a deep red circumscribed flush on both cheeks. Tongue dry in the centre. Pulse 112, very feeble. Breathing at times was very hurried, at others tolerably full and easy. Nearly two ounces of pus were let out by an incision made at the top of the right shoulder. This abscess did not seem to have any connexion with the shoulder-joint. The physical signs of the chest did not indicate any extension of the pulmonary mischief.

The dyspnoea increased. Great pain and distress were occasioned by the two portions of sternum riding over, and grating on each other during respiration. On December 12th, the lad's face was very dusky, and he was evidently sinking, and at 6 P.M. he died, his entire illness having lasted about thirty days. The skin did not present the slightest tinge of yellow, and at no stage of his illness had there been any rigors.

*Autopsy Forty-four Hours after Death.*—Body much emaciated. Right thigh and leg swollen and oedematous; left lower limb not so. The right femoral vein was compressed by an abscess beneath the fascia at the upper and anterior part of the thigh, which contained about an ounce of pus. On laying open the abscess above the right shoulder, the extremity of the acromion was found exposed and dead, and a portion of necrosed bone the size of a pea was loose and detached. The shoulder-joint was intact. Chest.—The artificial opening of the skin led into an empty circumscribed cavity behind the sternum nearly two inches in diameter, bounded in front by the sternum itself, which was bare and black, and posteriorly by the ligaments and aponeurosis. At the level of the third rib, the sternum was completely separated into two pieces at what appeared to be a natural articulation. An inch and a-half of the lower portion and half an inch of the upper were quite bare, and of a dark hue on their posterior aspect. The opposed ends of the two pieces could be made to overlap to the extent of a quarter of an inch. The left pleural cavity contained half a pint of puriform fluid. The outer surface of the lower lobe of the left lung and the corresponding costal pleura were of a deep red colour, and were glued together.

by a quantity of soft yellow lymph. The lower lobe of the left lung was condensed (at many places sinking in water) and tough, as if from pressure of pleuritic fluid. Its section was nowhere granular. The lower lobe of the right lung was oedematous, and in its substance, near the anterior margin, was a circumscribed cavity the size of a hazel nut filled with thick yellow pus. The pleural surface of the lower lobe was coated with a few flakes of recent lymph, which were most abundant along the free margin of the base. There was no communication between either pleura and the post-sternal abscess. The pericardium contained four ounces of clear straw-coloured serum; the lining membrane of the right cavities of the heart was stained of a deep red hue; the right cavities contained a small coagulum partially decolorized. The valves and muscular tissue of the heart were normal. **Abdomen and Pelvis.**—There was no fluid or lymph in the peritoneum. Liver and spleen healthy. Both kidneys much injected, and both, especially the left, contained several circumscribed deposits of pus, up to the size of a pea. The stomach and intestines were healthy; there was no abnormal injection or elevation of Peyer's patches, or of the solitary glands. There was a large abscess containing fully a pint of pus in the concavity of the right ilium. The bone over a space measuring two and a-half inches in diameter was quite bare and bathed by the pus; this exposed portion of bone was of a dark hue, and surrounded by a distinct line of demarcation in the form of a superficial groove; the abscess extended some inches downwards, behind the pelvic fascia, towards the perineum; the right psoas muscle passed through it, and was surrounded by the pus. The right sacro-iliac joint was laid open, and the ligaments and cartilage destroyed, so that the finger could be inserted between the bones; and when the limb was rotated, there was considerable movement of the one bone upon the other. The lumbar vertebrae were not reached by the pus, and appeared healthy; there was also an abscess containing several ounces of pus outside the pelvis over the convexity of the right ilium. This abscess communicated with that within the pelvis through the sacro-iliac joint. The right ilium, on its convex aspect, was also bare and bathed by pus over a space measuring about two inches in diameter. The bone here resembled the bare bone on the inner surface, and corresponded to it in situation. Two other abscesses were discovered, one beneath the fascia at the upper and anterior part of the right thigh already described, and another containing about an ounce of pus in the substance of the left iliacus muscle, but in no way implicating the bone.

*Remarks.*—This case presented some remarkable features in reference to diagnosis. The early symptoms were closely assimilated to those of enteric fever, and the resemblance was increased by the existence of tympanitis and tenderness over the cœcum. The absence of rose spots, which were carefully looked for every day, was the sole point of distinction; but even in enteric fevers these spots are not of universal occurrence. The pulsating tumour over the sternum might, at first sight, have been readily mistaken for an aneurism or a pulsating empyema; but the rapidity of its development, and the absence of the ordinary physical signs of empyema, negatived both of these suppositions. As regards the pyæmic nature of the case, the complete absence of rigors or of any peculiar discoloration of the skin is worthy of notice. The origin of the whole mischief is somewhat obscure. The boy had sustained no wound or injury, that could be discovered, to account for the pyæmia; he had no sign of scrofula, nor was there any absolute proof that the pyæmia resulted from the circulation of any specific poison in the blood. The condition of the intestines showed that there had been no enteric fever; but it may be mentioned that the boy came from a locality where typhus was very prevalent, and although no eruption could

be discovered on his skin, it is not impossible that he had passed through an attack of typhus before he came under observation. A formidable form of pyæmia, with purulent deposits in the joints, is well known to supervene occasionally upon attacks of typhus in certain epidemics, although this sequela has certainly been rare of late years in London. Surgical writers also speak of acute necrosis as not uncommon in "those debilitated states of the constitution that so frequently follow upon typhus fever." At the same time it is right to add that the boy's symptoms before he was brought to the hospital were not those of typhus fever, and therefore I am inclined to conclude that the acute necrosis and pyæmia were the common result of some other unknown morbid condition of the blood.

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ART. 17.—*Epidemic of Spotted Fever occurring in the  
Vicinity of Philadelphia in the Year 1863.*

By Drs. W. W. GERHARD and LAMB.

(*American Journal of Medical Sciences*; *Dublin Medical Press*,  
March 2, 1864.)

Dr. W. W. Gerhard, whose well-known observations on typhus and typhoid fevers entitle anything he may advance on the subject of fever to be received with attention, has given an account of a new form of fever lately observed by him in Philadelphia, which he considers entirely distinct from any of the recognised forms of continued or exanthematous fevers. The form of fever he describes he believes to be entirely unknown in Europe; and the only account of it extant is an imperfect description given of it by a number of physicians in New England, where the disease appeared between the years 1807 and 1816.

About the middle of February, 1863, Dr. Gerhard was called to see a boy, aged sixteen, who was taken suddenly ill with intense pain in head and back, with occasional delirium, and nausea and vomiting. In the intervals of the delirium he was dull and heavy, but able to answer questions correctly. On the second day there was an eruption over the whole body of spots varying in size from such as would be caused by the prick of a pin, to an inch or more in breadth. These spots were of a dull-red colour, not in the slightest degree elevated, and rather resembling ecchymoses such as might be caused by the puncture of an insect than a proper eruption. There was no diarrhoea; moderate heat and fever; the tongue was scarcely coated. The patient died in four days from the attack, sinking in a state of coma. A sister of the patient, aged twenty, was afterwards taken ill with the same symptoms and eruption. She died in twenty-six hours from the commencement. No distinctive lesions were found after death.

A few days after the disease showed itself at the Falls of Schuylkill, five miles from the city; it was there exceedingly fatal. In each of two families there were three deaths, in another two. Besides there were about twenty scattered cases, of which ten proved fatal.

The symptoms exhibited were sudden chill and intense headache, and pain in the back, followed by fever; the patient became dull and heavy, either not answering at all or only when loudly spoken to. In some cases there was delirium, but in the majority the cerebral disturbance tended rather towards stupor or coma. In fatal cases there was always coma a few hours before death. There was often vomiting in the commencement, but no epigastric tenderness. There was constipation and disgust of food; the urine was perfectly healthy; the degree of fever varied; the pulse was frequent, not strong, and frequently diminished in strength and rapidity; the heat of skin was comparatively moderate. In some instances the patient exhaled a peculiar odour. The eruption consisted of spots varying in size from a pin's point to ecchymoses an inch or two in breadth. Each spot was of a dull-red or purple colour, varying in shade; the lighter spots became somewhat lighter on strong pressure, but the darker were not modified in any way; they were evidently due to effusion of blood in the true skin. They were in no degree elevated, and were scattered pretty equally throughout the body, being perhaps a little more abundant in the extremities than the trunk. They usually appeared at the end of twenty-four hours, sometimes earlier, and in some cases were perceptible after death, although not very visible during life. The duration of the spots was very variable; in some cases they lasted a week or two, disappearing in the same way as the dark colour of a bruise. The complexion was dull and slightly yellow, but there was no jaundice. The eyes were moderately injected in some instances, but rather in the veins than in the arteries. In one case an eye was destroyed by suppuration. There were no glandular enlargements. No age was exempted, but the larger proportion of patients were between fifteen and twenty. More females than males were attacked. In one case examined after death there was congestion of the brain, and an infusion of serum at its base and in the ventricles. The lungs were slightly congested posteriorly; the right side of the heart contained very dark fluid blood, with a very small and flaccid coagulum. There were ecchymoses under the serous layer of the pericardium and under the serous covering of the stomach, and there was an ecchymosis a quarter of an inch in breadth in one of the glands of Peyer. The fever appears to have originated in the army in Virginia, before it reached Pennsylvania; but it does not seem to have spread by contagion. There was no positive evidence of its having been transmitted from the sick to the healthy; whilst in many cases in Connecticut, where it also prevailed, it attacked persons who had not been in the neighbourhood of the sick. With regard to its mortality, a number of the patients died in from twelve to twenty-four hours, and the largest number in the course of the second day. If the patient lived over forty-eight or fifty hours there was a fair chance of recovery, although fatal cases were met with after the lapse of several days. There appear to have been no critical days noticed. Some convalesced after two or three days, others after a week or two, and in one instance recovery was protracted for many weeks.

The points of distinction between this form of spotted fever and typhus insisted on by Dr. Gerhard are as follow: in spotted fever the disease is very rapid in its course, with delirium, but rarely of an active kind; there is an eruption wholly different from that of typhus; less heat of skin, which is never of the burning temperature of typhus, and with none of the peculiar odour of this disease. Typhus offers a true exanthematous eruption; but that of spotted fever is a scorbutic hæmorrhage. The duration of typhus fever is regular and long, that of spotted fever is irregular and much shorter. Typhus is unequivocally contagious; in spotted fever contagion is doubtful. In addition, there is the different rate of mortality in the two diseases.

In the treatment of this fever Dr. Gerhard found stimulants the most important remedies.

### ART. 18.—*Typhoid Fever in Children.*

By M. H. ROGER.

(*Dublin Medical Press*, Dec. 30, 1863.)

The following is a summary of certain lectures on this subject delivered by M. Roger at the Hospital for Infants, Paris:—

“At this hospital typhoid fever is frequent; in the course of a two years’ residence at this institution, M. Rilliet collected no less than one hundred cases; M. Taupin observed 127 in three years, and in one year, M. Roger has met with 44. When mentioning these returns, M. Roger remarked, that although no epidemic was prevalent, a dozen instances of the affection might be seen dispersed in his own and in MM. Blache and Bouvier’s wards. In general the patients are twelve or fourteen years of age, and the frequency of the disease is progressively less considerable according as the child is younger. Thus, in the first two years of life, typhoid is of very unusual occurrence; some few months ago, however, M. Roger observed a genuine instance of dothinentery in an infant of fifteen months, but this is entirely exceptional, and the case was at first mistaken for one of brain-fever. The professor remarked that in new-born infants the lenticular, and more especially the agminated glands, are subject to become inflamed under the influence of feverishness and diarrhoea, but this follicular enteritis is perfectly distinct from typhoid.

“The causes of the disease under consideration are at all ages more or less obscure, and the only circumstances obviously connected with its production are change of climate and epidemic influence. Thus the children admitted into the hospital for the treatment of typhoid are in general not born in Paris; their parents are mostly stone-masons from Piedmont, Savoy, Auvergne, or Limosin, who resort to Paris in summer to work at their trade. Typhoid is a primary affection, chiefly observable in robust, healthy children; delicate and sickly subjects, or those who have previously suffered from severe illness, in general escape infection.

"Provincial practitioners consider typhoid decidedly contagious; scientific demonstration of the fact is not, however, attainable in Paris, where it is impossible to trace the progress of contagion from one house to another, and where, in addition, the fomites of infection are too extensive to admit of accurate observation. The disease is very seldom contracted in hospital; in some instances, nevertheless, M. Roger is inclined to admit the contagious nature of the affection. Typhoid fever in children differs in several particulars, and especially in the final issue, from the same complaint in the adult. Although its perils are extremely great in infants under three years of age, we may state that in general after that age, this pyrexia is far less dangerous than in full-grown subjects, a fact probably referrible to the less considerable gravity and extent of the anatomical injuries. In children, ulceration of the larynx and intestine are unfrequent, and the *indurated* patches which indicate the extreme severity of the disease are seldom met with. The enteritis coincident with the intestinal eruptions is, however, more commonly observed in childhood than at a more advanced age.

"The mild and the severe forms of typhoid both occur in children as in adults, but the headache is much less violent in the former, and especially much less intense than in meningitis. Hæmorrhage, intestinal perforation, and bed-sores, are very rarely observed in infancy, and it is a strange fact that bleeding at the nose, a phenomenon of frequent recurrence in children, scarcely ever coincides with typhoid fever at that period of life. Intestinal hæmorrhage, which is not as some authors have opined, a critical symptom, but a consequence of ulceration, is extremely unfrequent.

"The inspection of the tongue affords at this age valuable signs of discrimination between typhoid fever and meningitis. In the former case, the tongue is always foul and more or less dry, whereas in the latter it is habitually moist and clean. It is needless to dwell on the other distinguishing symptoms, such as the lenticular eruption, tympanitis, &c. But we may state that in new-born infants the diagnosis is one of extreme difficulty; both affections being, however, almost inevitably fatal, the consequences of a mistake in this respect are unimportant. After the first two or three years of life the prognosis of typhoid fever is generally favourable. A cure, said M. Roger, should never be despaired of, even when the child presents all the outward appearances of approaching dissolution. Some children, after having been utterly given over, suddenly recover in the most unexpected manner.

"The question of contagion being still doubtful, M. Roger recommends the isolation of the sick child only in wealthy families; but as an excess of caution can never be injurious, this prudent measure should be resorted to whenever it is practicable. But on the other hand, the existence of fomites of infection is by no means problematic, and whenever the disease breaks out in a school or public institution, the pupils should be sent home, as was recently done for the cadets of the Military College of Saint Cyr. The curative treatment should not be exclusive; in a disease which has so great a tendency to induce debility and exhaustion of the system,

phlebotomy would be improper, and would at most be justifiable in case of very violent headache, and even then one or two leeches applied behind the ear are preferable. The same caution should be used in the exhibition of purgatives; the daily administration of laxatives is not more inexpedient in the case of children, than frequent bloodletting. Indeed, M. Roger has witnessed the fatal effects of such treatment. He does not believe it is in the power of medicine to check suddenly genuine typhoid fever; cases in which this result is supposed to have been attained, must be referred to mere gastric disturbance, or to synocha, the duration of which, when not interfered with, does not exceed twelve days. In the professor's opinion, one medication only is rational, it is that suggested by the symptoms.

"If the fever is mild, merely watch the case; confine the patient to bed, prescribe acidulated beverages, enemas, and poultices, and a cure will follow in a fortnight or three weeks. In severe congestive cases, instead of resorting to bloodletting, tepid baths of half an hour's duration should be prescribed, in order to lower the temperature of the skin. One or two baths of this kind may be taken daily, the forehead being at the same time kept cool with linen soaked in cold water. This is a most valuable resource, which the practitioner should have recourse to in the early stages of typhoid, because at a later period the bronchial mucous lining becomes engaged, and the baths must be discontinued. The little patient should be fed with gruel, chicken-broth, or weak beef-tea; mutton chops and other solid articles of food and wine, recommended by some practitioners, M. Roger prohibits, as absolutely dangerous.

"We have stated that M. Roger is no advocate of the uninterrupted aperient medication instituted by M. de La Roque, but under peculiar circumstances he regards this method as appropriate. Thus, in the incipient stage, and more especially if a bilious condition is present, indicated by a bitter taste of the mouth, nausea, or vomiting, together with constipation, a glass of effervescing magnesia, or a teaspoonful or two of castor-oil will be found extremely beneficial.

"In the evening, M. Roger prescribes a tablespoonful every hour or every two hours throughout the night of the following sedative mixture:—℞ *Misturæ amygdalæ*, ℥iv.: *aq. dest. lauro-cerasi*, ℔j.—℥ss.; *lactucarii*, gr. ss. ℥x. *Potassæ nitratis*, gr. iij.—v.

"The patient's chamber should be well ventilated and comfortably warm. Hygienic precautions are in this case of such paramount importance, that wherever circumstances admit of such an arrangement, two rooms, equally heated, ought to be devoted to the use of the patient, who should not occupy either for more than twenty-four hours in succession. If one room only can be given up for the use of the invalid, two beds should be at hand in which the patient can be alternately placed, and the bedclothes changed every day. M. Roger recommends the hair to be cut short, and the lips and teeth to be carefully sponged with water and *Botol's elixir*. If the symptoms assume more marked characters, the treatment must vary according to their nature.

"Constipation should be removed by the exhibition of mild laxatives. M. Roger prescribes half an ounce of citrate of magnesia, or one grain of calomel mixed with half a drachm of powdered sugar, and divided into ten powders, one to be taken every hour or every two hours—a method which seldom fails in acting on the bowels after five or six doses have been taken. If diarrhoea is troublesome, it must not be suddenly or entirely checked; but, on account of its debilitating effect, and the consequent aggravation of the cerebral symptoms, it is proper to keep it within bounds by the administration of starch or astringent enemas (rhatany).

"M. Roger contends with thoracic complication by the exhibition of a grain or two of oxysulphuret of antimony, ten or twelve grains of teroxide of antimony, or two grains and a half of tartar emetic in a four-ounce mixture. He prescribes, at the same time, counter-irritation with croton-oil, tincture of iodine, or small blisters, from which the cuticle is not removed, in order to avert the possibility of diphtheritic exudation. We may here remark that, in bronchitis, coincident with typhoid fever, the remedy in which M. Rilliet had the greatest confidence, was the infusion of snake-root, and that in pneumonia this practitioner never resorted to venesection—a method likewise deprecated by M. Roger. In the ataxic and cerebral forms of fever, musk is the most efficacious medicine. Professor Roger exhibits this drug in doses varying from two to fifteen grains in a mixture, or an enema. To remove delirium, West recommends laudanum, but on account of its bitter taste, M. Roger prefers the syrup of poppy, or of morphia, or very minute doses of the extract of opium. In this case, cold sponging and affusions have also been found highly beneficial.

"In the severest forms of adynamic and ataxic fever, when exhaustion is the leading feature of the case, M. Roger applies blisters to the nape, or, preferably, to the thighs, where they are more easily dressed. He exhibits, at the same time, tonics and restoratives,—viz., 15 to 45 grains of extract of chinchona in an infusion of coffee, or one or two tablespoonfuls of the syrup of chinchona. Antiseptics, such as the carbonate of ammonia (from 8 to 15 grains), or chlorides, which have fallen into undeserved oblivion (liq. sodæ chlorinatæ), he also resorts to with advantage. Finally, if any intermittence or periodicity is detected in the symptoms, M. Roger relies on the efficacy of sulphate of quinine, from two to six grains of which he administers in a well-sweetened infusion of coffee."

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### ART. 19.—*On the Treatment of Tropical Malarious Fevers.*

By Dr. JOSEPH EWART, Bengal Medical Service.

(Pamphlet. Calcutta: Lepage and Co. 1862.)

After an elaborate historical review of past and present modes of treating these diseases, Dr. Ewart confirms the conclusions at which



we arrived in a former volume, when noticing Dr. Hare's investigations in the same direction. He says:—

“The treatment of malarious fevers has now arrived at a pitch of success, perfection, and certainty which, judging from the records of the past, could never have been paralleled or rivalled in ancient times—thanks to an improved system of physiology and pathology and to the microscope; to a better knowledge of therapeutics, to organic chemistry and the ‘memorable discovery’ of quinine by Pelletier and Caventon in 1820. We have now to guard against retrogression into less successful methods, and the fascinations of innovations of questionable utility, to accomplish which every student of medicine will do well to bear in mind, that the practice of physic has undergone fluctuations from one extreme to another, for more than two thousand years.

“Hippocrates was allowed to have practised with more success than his predecessors. Asclepiades was believed by many to have been still more fortunate than Hippocrates; yet the road which he pursued was totally different. Galen, who reviewed and improved the system of the Coan sage, rose to great eminence, and marked out the path of medical practice for many centuries. The doctrines of Paracelsus shook his authority: and these, in their turn, gave way to newer modes of thinking.’ (Robert Jackson.) Avicenna based his practice on those recommended by Hippocrates, and his verbose commentator, Galen. Van Helmont exerted himself in modifying and improving the ideas of Paracelsus. Silvius de Bae, in Holland, towards the end of the seventeenth century, made innovations on the treatment of his predecessors by attempting to regulate the mixtures of the bile and the pancreatic juice. Willis, in England, struck out a new theory, which never gained much popularity. The sagacious and self-reliant Sydenham revived the antiphlogistic plan of the Arabians. Boerhaave improved upon the method of treatment employed and lauded by Sydenham. Professor Stahl’s opinions gained great notoriety in Europe, as did those of his cotemporary and colleague, Hoffman, of the Saxon University of Halle. Dr. James professed to do wonders by means of his celebrated powders. But the greatest improvement in the management of fevers was marked soon after the introduction of the Peruvian bark into Europe, by the Spaniards, and by its employment by the Jesuits in all parts of the world, by Lind, Clark, Jackson, and others. Bark was then supplanted by the mercurialization of Balfour and Chisholm; and soon also blood-letting—copious, bold, and repeated—was added to the mercurial plan by Dr. James Johnson, with a zeal and enthusiasm worthy of a better cause. Sir James Annesley and Twining condemned ptialism as Jackson had done long before, but they all purged and bled far too frequently, and far too copiously. Quinine was now gaining the reputation, which its parent had enjoyed for much more than a century, before it was compelled to yield to new opinions and to new remedies. Gradually, but steadily, as its wonderful powers became better known, as those peculiar effects produced by it, when given in efficient doses, were proved by experience to be not only innocuous but advantageous,

the alkaloid, in the elegant easily digestible form of the disulphate of quinia, succeeded in displacing violent cathartics and extravagant depletion, general or local.

"Since Hare penned his Delhi pamphlet, but more especially since the publication and circulation of the *Medical Board's Report* on the experimental trial of his system, no man has ever dreamt of superinducing salivation in malarious fevers, or of having recourse to general blood-letting except in extremely rare instances—so rare, indeed, have they been, in my own practice, that I have never once used the lancet in any of the thousands of fever patients that have been under my care since I came to India. And here I feel bound to express my humble tribute of esteem for, and admiration of, Mr. Hare, for giving the culminating death-blow to those relics of spoliative treatment, which existed, in too great profusion, at the time when he first attracted notice, by the publication of his views; for braving the active or passive opposition of many of his professional brethren—many of them being his seniors in a close seniority service, by undertaking an experiment, the results of which established the fact that malarious fevers, whatever be their complications, were curable by generous doses of quinine, assisted, of course, by the judicious administration of emetics, laxatives, diaphoretics, diuretics, refrigerants, anodynes, &c.; for affording conclusive testimony, that it was perfectly safe (if not advisable, as I believe, in by far the largest majority of cases for the reasons already assigned) to give the drug during the paroxysms; for succeeding in inspiring the profession with the belief that it was the soundest practice to exhibit larger and, therefore, more effective doses than it had been the custom of its members previously to do; for, in short, finally, and, it is earnestly hoped, for ever, sealing the doom of unnecessary spoliation of every kind and of every form, and giving an irresistible impetus to the introduction of the present antiperiodic and conservative system, which now reigns with undisputed supremacy, wherever the medical science of the West is called upon to oppose the progress of miasmatic fevers—to the honour of a noble and humane profession, and to the incalculable—the unspeakable benefit of mankind."

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ART. 20.—*On the Doctrine of Irritation and on the Nature of the Early Changes in Inflammation.*

By Dr. LIONEL S. BEALE, Professor of Physiology and of General and Morbid Anatomy in King's College, London, &c.

(*Lancet*, December 6, 1862.)

It is almost universally held that what is termed "irritation," or "excitation," exerts a most important influence upon the process of nutrition. The action of "stimuli" upon living matter is considered to be a necessary preliminary to the manifestation of any phenomena. So, different kinds of stimuli or excitants—mechanical, chemical,

and electrical—are spoken of; and it is held that every vital action must be preceded by an “excitation.”

Increased “irritation” is supposed to “excite” increased action, and to cause a living “cell” to take up an increased proportion of nutrient matter within a given period of time. Irritation is believed to be the starting-point of those complex phenomena which in the higher animals we speak of as “inflammation;” and, according to the views now held, it is impossible to conceive the process of inflammation taking place without the previous occurrence of irritation.

Although of late years the changes occurring in the anatomical elements of tissues (cells) in health and disease have been carefully studied by very many observers, there still exists the greatest difference of opinion with regard to the nature of the processes which occur, even in the very simplest structures, during their growth.

A normal epithelial cell, for example, takes up a certain quantity of nutrient matter within a certain time, and certain changes are produced in a definite order and in regular succession. This cell, it is said, may be excited or stimulated to *increased action*. The normal process of nutrition may be exaggerated, and the cell may take up a much larger quantity of nutrient matter within a corresponding period of time, and increase in size with greater rapidity than before. Other changes may be observed in the epithelial cell, but these need not now be considered.

What is the nature of this process of “stimulation,” “excitation,” or “irritation,” and how does it produce these most important results? How is it, for example, that a particle of sand falling on the conjunctiva, or a thread passed through a living tissue, causes an increased action of the cells in the immediate neighbourhood? It is certain that the change is not dependent upon nervous influence, for it occurs in tissues destitute of nerves, and may be observed in plants. To say that the exaggerated action is the result of the “irritation” is no explanation at all: it is no more than stating the fact, that the cells grow faster, and take up more nutrient matter, soon after a foreign body is forced into close contact with them, so as to displace or injure them; for not only are the cells that are touched influenced, but all those in the immediate neighbourhood.

In every case of the so-called *stimulation* or *excitation*, the access of nutrient matter to the living and active part of the cell is facilitated. By the “irritant” perhaps a hole is made in the outer inactive matter (cell-wall), or a portion of it may be removed. The pabulum reaches the living matter more readily than it does under normal circumstances. The rapidity of growth of living matter—that is, the rate at which living matter communicates to inanimate pabulum the same powers with which it is endowed, varies simply according to the rapidity with which the inanimate matter comes into contact with the living matter. The soft living matter in normal tissues is always separated from the nutrient pabulum by a certain thickness of matter which possesses no inherent powers of growth (cell-wall).

If this be rendered more permeable to nutrient fluids, or reduced in thickness, or a portion of the surface torn away so as to expose the soft matter within, it is obvious that there will be greater freedom of access for the nutrient pabulum, supposing this to be present. The soft living matter will take up the inanimate pabulum more rapidly than normally, and convert it more quickly into living matter. In fact, normally, the conversion of pabulum into living matter proceeds *under certain restrictions*, while under the conditions supposed *the restrictions are to some extent removed, and so the process goes on faster.*

So far, then, from "stimuli," "irritants," or "excitants" *causing increased action*, they operate simply by removing restrictions, and thus the living matter is permitted to grow much faster than was possible under the conditions which existed previously. Irritation is not the starting point of inflammation, but the first change is simply a more rapid appropriation of the nutrient matter by the living matter of the cells, consequent upon the impediments which interfered with the free access of this nutrient matter being diminished. The process of nutrition—the conversion of inanimate pabulum into living matter, may be explained both in health and disease without assuming the occurrence of an *irritation* or *excitation*, and we may study and describe the changes without using the terms *irritants*, *excitants*, or *stimuli*.

#### ART. 21.—*Malignant Anthrax cured by Cauterization.*

By M. JOBERT.

(*Dublin Medical Press*, Feb. 17, 1864.)

"If the distinctive character of carbuncle be attentively watched," says M. Jobert, "it will always be observed to have a tendency to spread in the cellular tissue, and to extend toward deep-seated organs. With regard to the general condition of the patient, the blood will invariably be found to have undergone remarkable modifications in its principal constituents, fibrin and corpuscles, consequent upon the deleterious influence of physical or mental distress, insufficient diet, great fatigue, or unwholesome food. A tree withers because the soil is poor; the human textures likewise become diseased when the nutrimental fluids are adulterated; a peculiar noxious atmospherical influence also predisposes the skin to become the seat, not of genuine inflammation, but of a special mode of inflammatory action, such as erysipelas, zona, boils, or carbuncles, or, under different circumstances, numerous abscesses are observed without any putrid infection being clearly ascertained to exist."

M. Jobert's remarks on benignant carbuncle apply with even greater force to the pathology of malignant anthrax, which, according to M. Bourgeois, of Etampes, differs from *charbon*, or malignant pustule, merely by the fact that it is preceded by a peculiar feverish excitement, of which the carbuncle would seem to be a critical manifestation, whereas the general symptoms are secondary in malignant

pustule. The two diseases may, however, be discriminated by other signs, which it is not our purpose to dwell on at present, but we merely alluded to pustula maligna because the local treatment of both affections should be conducted on the same principles. In malignant anthrax debilitating causes are concerned in the production of the disease, and M. Jobert opines that residence in a damp habitation greatly promotes its development. He further remarks that animals fed in marshy pastures are more liable to carbuncle than those which graze on dry hills, and in this respect the pathogenic influence is the same on the human subject.

A partial illustration of this view may be derived from the history of a patient recently treated in the wards of the Hôtel Dieu. The man was in the enjoyment of perfect health when the disease set in; his diet was nutritious, and he had undergone no unusual fatigue, but he resided in a damp apartment situated on the ground-floor. After a few days' discomfort, he experienced pain in the right lumbar region, and after his admission into the wards a tumour was discovered lying at the side of the vertebral column, resting on a broad, ill-circumscribed, and dusky-coloured basis, and black at its centre, from which escaped a serous liquid. The intense pain and the feverishness usually concomitant with benignant carbuncle were not present. The disease was not in this case the result of the inflammation of the cellular tissue included in the fibrous areolæ of the derm, as a protection to the capillaries and nerves which run from the inferior to the superior surface of the latter; malignant anthrax occupies the cellular structures situated beneath the skin, and is an affection of a putrid nature, which runs a peculiar course, and requires something beyond the cruciform incision appropriate in cases of common carbuncle.

Incision would here almost infallibly be followed by hæmorrhage, which, however trifling in amount, might, on account of the low state of the system, give rise to considerable aggravation of the symptoms. M. Jobert, therefore, does not resort, under the circumstances, to the use of the knife. In the case under consideration, he transfixed the tumour on two successive days with troches of chloride of zinc. This operation was instituted on the 6th, and repeated on the 7th of December. The eschar was detached on the 14th, and from this date healthy granulation set in, and under the influence of tonics and generous diet, a complete cure soon followed, without the loss of a single drop of blood.

#### (C.) CONCERNING CHRONIC DISEASES.

#### ART. 22.—*Fatal Cystic Disease of Iceland.*

By Dr. ARTHUR LEARED.

(*Medical Times and Gazette*, Sept. 12, 1863.)

The inhabitants of Iceland, we learn from Dr. Leared who has recently visited the island, are afflicted with a fatal and loath-

some disease, to a degree unknown in other countries. Tumours of a peculiar kind form in the body, no part of which is exempt from their encroachments. The internal organs, as well as the muscles and bones, are in turn affected. The sufferers may be recognised in all parts of the country, but especially in the inland districts, by their languid looks and sluggish movements. Not only is much suffering induced, but Dr. Hjaltalin, the well-informed physician resident at Reykjavik, states that a fifth of the total mortality was caused by this disorder. A considerable number of sheep and oxen also fall victims. To arrest or to diminish such frightful consequences, Dr. Leared proposes a remedy which he holds could not fail to be effective. And first he proceeds to show the grounds upon which this opinion rests. The tumours which form consist of bladders distended with fluids; these bladders possess independent life, and are, in short, immature tapeworms.

The singular manner in which intestinal worms propagate themselves long baffled the researches of naturalists; but the labours of the distinguished Danish *savant*, Steenstrup, followed by Von Siebold, Eschricht, Küchenmeister, Leuckart, Cobbold, and others, have at length explained the reproduction of the tapeworms, the most injurious of the tribe. They have proved that the worms pass through a stage of immaturity, in which the resemblance to their parents is so remote that the connexion had been altogether overlooked. The change of the caterpillar into the butterfly affords the most familiar analogy of this difference of form.

The Icelandic farmer is well aware that in the livers and amongst the intestines of oxen and sheep, and in the brains of sheep affected with staggers, he often finds bladders filled with fluid which evidently form no part of the animal. These bladders, of exactly the same nature as those of the human subject, are undeveloped tapeworms, which become mature in the intestines of an animal suited for their reception.

In Iceland the animal essentially concerned in this matter is the dog. It is true that the inhabitants themselves may be the medium of propagation, but as they are not often affected with tapeworms, this can seldom happen. On the other hand, Dr. Hjaltalin states that, as a rule, the dogs all pass pieces of the worm.

The mature worms consist of a greater or less number of thin flat pieces, jointed together, which, gradually diminishing in size, terminate in a very small rounded head, which attaches itself to the intestine of the animal. Some species are many feet in length, while there is one which measures hardly two lines.

Few can fail to have observed whitish, still moving joints of the larger species issuing with the excrement from the dog, or lying motionless on the ground. It must not be supposed that loss of these segments indicates weakness or tendency to death in the worm itself; their separation is, on the contrary, the natural mode of propagation.

Each segment is filled with innumerable eggs, invisible to the unassisted eye, which are not set free in the intestine of the dog, but in the outer world by the decay of the case containing them. It is

impossible to say to what extent these eggs preserve their vitality; but so resistant is the outer shell, that I have found them by examination with the microscope quite intact after having been steeped for twelve hours in strong sulphuric acid. It seems that desiccation is most fatal to their vitality, and there can be no doubt it is for this reason that sheep are much less liable to staggers in dry seasons and on high grounds, than when the season is wet or their feeding grounds are low and damp.

The eggs of the tapeworm having reached the stomach of an animal adapted for their development, soon produce minute creatures, provided with a boring apparatus, by means of which they penetrate the tissues of the animal. They now pass instinctively to particular regions, or having penetrated in all directions, those alone survive which reach suitable parts. These parts vary with the species of worm; the liver is the most common seat of that which inhabits the human subject; the brain in case of sheep; and the muscles in that of the pig.

Three or four species of tapeworm exist in the dog, which, as already stated, are of very different sizes. It is remarkable, however, that the smallest worm produces some of the largest bladders.

Two varieties of the large bladders have been described; one attains the size of a small orange, and has a single neck and head, which it has the power of projecting beyond its globular body. This creature is frequently found amongst the abdominal viscera of ruminants, and more rarely in those of men. The other species grows to a much larger size, and possesses a remarkable power of reproduction. . . .

Whatever the difference of shape or size of the bladders, their destination is to remain quiescent until devoured along with the flesh of their host by an animal adapted for their development. The bladders then become digested in the stomach, while the head or heads pass into the intestine, where a neck and long body is speedily superadded.

Those bladders which infest man must, in the great majority of cases, either die of themselves or perish with their host without having produced sexual or mature worms. In a few instances tapeworms may be generated by the bladders making their way into his stomach or intestines, from the liver or other parts, so that a man might thus infect himself with tapeworm, or the bladders having been expelled from the bowels or discharged by ulceration or by a surgical operation, may become swallowed by dogs. But as the species found in man are common to the lower animals, it is plain from what has been already said that the propagation of the worms is easily sustained.

The evidence that the dog is the *medium by which the worms are propagated* rests upon numerous experiments conducted under circumstances leaving no doubt that tapeworms were produced by feeding them on fresh bladders. The conditions necessary for the propagation of the worm are nowhere so complete as in Iceland. The farmers kill their own meat, and the offal—frequently contain-

ing living bladders—is the food of the dogs. Abundance of mature worms are thus produced. Again, the whole country is one vast pasture, and dogs are universally employed in managing the sheep. These dogs shed everywhere segments of tapeworms, the eggs from which are diffused by rain and melted snow. These eggs find their way into drinking water, or adhering to articles eaten raw, as bilberries, or the stalk of the angelica, are swallowed by men. The hands are even liable to be infected from contact with the grass, so that the eggs may easily be swallowed with ordinary food, or from the casual application of the hand to the mouth.

The difficulty of escaping the danger having been sufficiently insisted upon, Dr. Leared proceeds to explain the mode of prevention. First, as regards the direct production of the worm. Dogs should be carefully prevented from eating meat containing bladders; livers of oxen and brains of sheep, unless boiled, are to be especially guarded against. All bladders of the kind should be buried deeply in the earth. Second, as regards the indirect source of the worms, and the direct cause of disease and death of men and animals. The most effectual mode of destroying the tapeworms would be destruction of the dogs. But as the utility of the animals places that out of the question, we must destroy the worms alone.

To effect this, it will be necessary to submit all the dogs in the island to a certain treatment, for which purpose fortunately a powerful and manageable remedy exists. This is kamala, a coarse, reddish-brown powder, the produce of a plant growing in India, where it is used as an infallible remedy for expelling tapeworms from dogs. The first cases of its employment in England, showing its great efficacy against the worm in the human subject, were published by Dr. Leared. It has the advantages of being cheaper and more readily taken than any other remedy. If obtained in large quantity, a sufficient dose would cost about a penny, and, being tasteless, the medicine could be given mixed with butter. After taking the dose, the dog should be confined until the worms are passed, when these, and the accompanying excrement, should be carefully collected and burned, as suggested by Dr. Cobbold, or buried deeply, if fire is not at hand.

As, however, the head of the tapeworm is not always eradicated at first, and the worm is then reproduced, it would be necessary to repeat the dose twice more, at intervals of six weeks, carefully burning any worms, etc., as before. By this plan the great majority of dogs would certainly be freed from the worms, although it might be desirable to prolong or to repeat the treatment in exceptional cases. To insure success the treatment should be undertaken throughout the island within a given period. It would be of little use for a farmer to cure his own dogs, while those of his neighbours continued to pollute his fields. Probably the most effectual mode would be to make the matter compulsory, as vaccination is at present in Iceland. Taking the number of dogs at a third of the inhabitants, would give 20,000 as the number to be treated, and depôts might be established, from which the people could gratuitously obtain the medicine.



If this plan of treatment were rigorously carried out, Dr. Leared believes that subsidence of mortality from the cystic disease would gradually follow. It must be gradual, because the parasite once established in the body is sometimes known to live there many years. As sheep and cattle are usually killed when badly diseased, few chronic cases are found amongst them, and therefore a marked diminution of the number affected might be quickly expected.

### ART. 23.—On *Trichina Disease*: its Prevention and Cure.

By Dr. JULIUS ALTHAUS.

(*Medical Times and Gazette*, April 2, 1864.)

In the elaborate paper from which the following extracts are taken, Dr. Althaus has admirably summed up our knowledge of trichiniasis. An accurate knowledge of this newly ascertained affection is of the greatest importance to the practitioner. It is highly probable that the disease, hitherto unrecognised, is of occasional, it may be frequent, occurrence in this country. *Trichinæ* have often been found in the muscles of subjects on the dissector's table; and it is known that pigs are infested to a great extent with the parasite. We have still to learn to what extent acute trichiniasis prevails. The subject is one of notable interest.

"The discovery of trichina disease, or trichiniasis—no doubt the most important medical event of the last few years—affords a happy illustration of the close connexion that exists between the several branches of medical and natural science, since the occurrence of zoology, experimental physiology, pathological anatomy, and clinical medicine, working for one common purpose, was indispensable to enable us to arrive at a complete knowledge of the remarkable and interesting phenomena included under the above heading. I intend in the following paper to give a concise account of the subject in its principal bearings, and shall therein follow chiefly the researches and writings of Virchow, Vogel, Leuckart, and Mosler.

"*Trichinæ* were first discovered in England, where, in 1832. Mr. Hilton noticed, in the human subject, the cysts in which trichinæ are generally found enclosed, and which appear to the naked eye as small white corpuscles. Mr. Hilton believed these corpuscles to be

animal formations, but he did not perceive the worms contained in them. In 1835 Professor Owen discovered the nematoid worm enclosed in the cyst, and called it *trichina spiralis*, on account of its resembling a hair in its minute filiform size, and its being coiled up into

Fig. 1.



spiral turns. This name has been generally accepted by zoologists, and it is only quite recently that M. Davaine, the author of a well-known treatise on entozoa, has proposed a different name for it—

*viz.*, *Pseudalius Trichina*.\* The only reason that can be given for this innovation is, that the tail of those trichinæ which are found in the human intestines is divided in two horns or cones, and that the same peculiarity exists in *pseudalius* Duj.; but in every other respect the structure of trichina entirely differs from that of *pseudalius*, the former worm being, in fact, far more closely allied to *trichocephalus* and *trichosomum*, from which latter it is only distinguished by its size and a different structure of the genital organs. It is therefore by no means probable that M. Davaine's innovation will find favour with zoologists, as it would only lead to confusion; and no doubt the worm in question will always be called by the name first given it by Professor Owen.

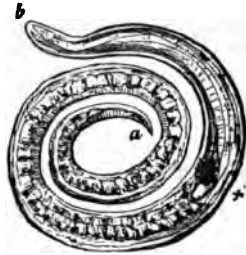


FIG. 2.—Female trichina from the muscle of a man; the cyst is removed, but the spiral turns are preserved. *a* is the head, *b* the tail. The alimentary canal begins at *a*; its structure is cellular, and it fills up the whole of the inner part of the body from *a* till *†*, while from *†* to *b* it is reduced in thickness.

"Since its discovery in 1835, trichina has been frequently noticed, more especially by German and English anatomists. In the anatomy rooms of the Universities of Berlin and Edinburgh trichinæ have been found in two or three per cent. of the subjects dissected. They were also noticed by several observers in Denmark, France, and the United States. The animals in which they have been found are the cat, the crow, the jackdaw, the hawk, the mole, and the pig; it is, however, not yet settled whether some of the worms found in the former of these animals do not rather belong to a different species—*viz.*, *trichina affinis*. It was, however, only in 1860 that more minute investigations concerning the nature and development of trichina were undertaken, and Professors Virchow and Leuckart, who worked independently of one another, simultaneously came to nearly the same conclusions as regards the natural history of the worm. Zenker was the first to find, in a girl who had died at Dresden, numerous trichinæ in the striated muscles, and to recognise the parasite as cause of the illness and death of the patient, in the spring of 1862, about thirty cases of trichina disease occurred in Plauen, in Saxony. In some patients small pieces of muscular tissue were excised and examined by the microscope, and thus, for the first time, the diagnosis of trichina disease was made in the living subject. Since then numerous cases of it have been observed, especially in the kingdom of Saxony and the Prussian province of Saxony, as in Magdeburg, Leipzig, Eisleben, &c. From the end of October to the middle of December, 1863, there was a true epidemic of this disease in Hettstedt, near Eisleben, in which one hundred and fifty persons were affected, and twenty-four of them died. It is, however, not probable that the disease is confined to

\* *Gazette Médicale de Paris*. 1863. 4—11.

the districts just mentioned, as no doubt many cases of it have occurred elsewhere, but have not been recognised as such by the medical practitioners. A striking instance of this kind may be given. In 1863 Professor Langenbeck, of Berlin, excised a tumour which had grown on the neck of a man. During the operation he noticed that the muscles which were laid bare contained a number of encysted trichinæ. The patient being questioned whether he had not at one time or another been affected with a remarkable illness, related the following history:—In 1845 a committee, consisting of eight gentlemen, were occupied with the inspection of schools in Saxony. On one occasion they dined together at an inn, and partook, amongst other dishes, of ham and sausages. One of them, however, went away without having taken anything but a glass of claret. The other seven—amongst them the man who related the history—drank hock, and ate of the dishes mentioned. They all fell ill, and four of them died. Suspicion fell upon the meal and the host. The wine that had been drunk was analysed; no poison was found, but the host continued to be suspected, and was at last obliged to emigrate. No doubt suspicion of poisoning may frequently have attached to innocent persons, who had unwittingly provided a meal with dishes containing trichinæ. Several cases of a similar kind have been related by Dr. Husemann.

All observations made on human trichinæ until 1860 concerned such cases only in which the trichina disease had healed, that is, in which the worm had been seen in the encysted, not in the free state. We now know that, at least two months are necessary for the production of a complete cyst, and that men or animals, which live so long that the trichinæ existing in them may become encysted, are likely to survive the disease. Before this was known, the opinion therefore gradually gained ground that trichina was a harmless animal, and more a curiosity than a source of danger. On this account the practitioners and clinical observers took no further interest in the worm, which was left to the care of zoologists and anatomists. In a purely scientific point of view, however, trichina soon proved to be a problem of surpassing interest, as nobody knew whence it came, nor how it could migrate into the flesh of living men, nor how it was generated, for no organs of generation, no ova, no progeny, had been found. It is therefore scarcely surprising that even good observers resorted to the old hypothesis of spontaneous or equivocal generation in order to explain the origin of trichina. Thus, Dr. Bristowe and Mr. Rainey believed that trichina was generated from fat formed between the muscular fibres, and that the nuclei, which became visible after the fat had gradually vanished, played an important part in these intermediate changes which occurred between the appearance of the animal and the disappearance of the fat!

“In many respects trichina resembles cysticercus, which is most frequently found in pigs, but is by no means rare in man. It is true that cysticercus is larger than trichina, for while the former has the size of a pea, or even of a small cherry or bean, the latter ap-

pears only as a little white speck, even if the cysts are taken together with the animal. On the other hand, however, cysticercus is, just as trichina, destitute of organs of generation and of ova; it often occurs in large numbers, and it is also found in the flesh. We know that cysticercus cellulosæ is the larval state of tænia solium; that, in fact, the same worm lives for some time as cysticercus, and is afterwards changed into tænia; that tænia produces not only ova, but also living progeny, which first become cysticerci, and afterwards are again metamorphosed into tæniæ. These facts, which went far to render the theory of spontaneous generation untenable, soon led zoologists to inquire whether or not similar processes might take place with regard to trichina. Virchow was the first who succeeded in showing, by experiments, the existence of alternate generation in trichina. He fed a dog with *encysted*, but still living, trichinæ, taken from a man, and found, four days afterwards, numerous *free* trichinæ in the intestines of the dog. These animals were seen to possess sexual organs, containing ova and spermatozoa. He also showed that the cyst in which the animals are enclosed, when found in muscles, is nothing but a changed muscular fibre; and it thus became evident that the animals did indeed penetrate from without into the structural elements of muscles. These and other experiments of Virchow, which were confirmed by those of Leuckart, Claus, and others, have led to the conclusions, *that there exists alternate generation for trichina, as it does for cysticercus; that if animals are fed with trichinæ taken from the muscles, intestinal trichinæ are formed, which produce ova and living progeny; that these latter, without leaving the animal in which they have been generated, immediately penetrate the coats of the intestines and migrate into the body, more especially into the striated muscles, where, unless the animal in which they are contained should previously die, they are, after a time, encysted, and wait for the moment when they may be eaten by another man or animal, to undergo the same changes as before.*

"It thus appears that the danger which may accrue to man from trichina is far greater than that with which he is threatened by cysticercus and tænia. While the latter require to be eaten on two several occasions, the former only requires to be eaten *once* in order to produce a progeny which infects the whole system. Moreover, cysticercus and tænia scarcely ever cause a fatal result, while even within the last three years a large number of deaths is known to have been brought about by trichina. A knowledge of the nature of the worm, of the symptoms of trichina disease, of the way in which this is brought about, and of the means by which we may hope to prevent or cure it, is, therefore, of considerable importance for the medical practitioner."

"*How should Suspected Meat be examined for Trichinæ? From which Muscles should Specimens be taken?*—I have already mentioned that the cysts are visible to the naked eye as whitish, round, or ovoid spots, with which the surface of the muscle is sprinkled. If these are touched with a drop of acetic acid, or, better still, with

diluted hydrochloric acid, the lime is dissolved and the white colouring disappears. This experiment is, however, not perfectly certain if larger pieces of flesh are examined, for the acid then produces a deposit from the muscular juice, whereby the whole surface becomes indistinct and turbid. It is, therefore, the best plan to cut off a very small piece of flesh with a fine pair of scissors, to tear this asunder with needles, and to free the cysts as much as possible from the flesh. If this is done on a glass resting on a dark object the cysts may be clearly distinguished as whitish grains, and the dissolving power of acids becomes well apparent. If the spots retain their colour, it is probable that small pieces of fat, nervous fibres, or similar formations, are present. But as pieces of fat may be connected with the cysts, a negative result is not so decisive as a positive one, and it is therefore, in doubtful cases, always better to use the microscope in order to decide the point.

"It does not matter very much from which muscles the pieces to be examined are taken. Even if there are only a few trichinæ, they generally exist in all the muscles of the body, excepting the heart. The heart of pigs may therefore be eaten with impunity. Trichinæ are, however, more numerous in the tendinous extremities of the muscles, which is probably due to the circumstance that a large number of trichinæ penetrate as far as possible in the muscular tissue, and only stop their progress if certain impediments (as tendons) offer. If we, therefore, wish to make the diagnosis of trichiniasis in man, it is best to excise a little piece of flesh close to the insertion of a muscle. *Trichinæ which have not yet become encysted can only be recognised by means of the microscope.* A thin layer of flesh should be cut with a sharp scalpel, spread over a glass plate, and moistened with a drop of water. If it is then covered with a thin sheet of glass, we may distinguish trichinæ, if there are any, with a magnifying power of 50. Their intimate structure, however, can only be recognised with a power of 300."

The diagnosis of trichiniasis had never been made in the living subject until 1860. In that year Dr. Wencker, of Dresden, recognised an epidemic of the disease.

The morbid symptoms caused by the immigration of trichinæ are interesting in a practical as well as in a scientific point of view. There are, in fact, few internal diseases where the cause of the disorder is so manifest, and where its action on the system may be so distinctly traced in all its successive stages.

"Trichiniasis is a more or less severe affection, according as few or many parasites are eaten, and a small or large progeny is produced. Thus, in the epidemic of Burg, near Magdeburg, a woman who had eaten a quantity of raw pork with bread fell ill and died. Her child, who had sucked a spoon used by the mother, had symptoms of mild trichiniasis, and recovered.

"Three stages of the distemper may be distinguished, the *first* of which comprises the time from the arrival of the trichinæ in the intestines until the birth of the first of the progeny. This stage generally lasts from four to eight days, and its symptoms are by

no means remarkable. There is only loss of appetite and general malaise. The *second* stage is the most important one, and lasts from the time when the embryos commence their migration from the intestinal canal into the muscles until they have taken up their permanent abode in the muscular tissue. The first symptoms in this stage are generally those of a more or less violent irritation of the bowels. There is pain in the abdomen, and either profuse diarrhoea, or, what is more frequent, obstinate constipation. In severe cases—that is, in such where the number of trichinæ is very large—fever of a typhoid character soon sets in. There are rigors, followed by heat; the pulse rises to 130 beats; animal temperature is increased; there is loss of appetite, general prostration, and sometimes even delirium. The urine is highly coloured, and contains sediments of uric acid. The quantity of urinary water is sometimes diminished and sometimes normal. The fever is no doubt caused by the irritation set up by the worms acting at the same time upon an innumerable multitude of primitive nerve fibres, capillary vessels, and other delicate structures.

“A symptom scarcely ever wanting is early *œdema of the face*, where most of the muscles which become infected by the trichinæ lie close under the skin, and are not covered by fasciæ. The *œdema* of the lower extremities and other parts of the body, which may be observed at a later period of the disease, is due to a hydræmic condition of the blood which is gradually developed.

“The symptoms caused by the parasites in the muscles themselves are not less striking. There is pain, especially if the patient attempts to extend the muscles; these are rigid and swollen, and there is a feeling of great lassitude. The muscular pains are generally first perceived in the legs, and are increased by pressure and by voluntary movements. They are more considerable at the first attempt to move which is made by the patient after they have remained for some time in the same position; the movements which are afterwards made are not quite so painful. Muscles which have special functions are affected in a special manner. Thus, dyspnoea is produced by trichinous infection of the diaphragm, the intercostals, and other muscles of respiration. If the muscles of the larynx are infected there is hoarseness and loss of voice. By trichiniasis of the tongue and the muscles of mastication and deglutition, the processes of speaking, masticating, swallowing, are impeded or rendered impossible. In cases of extreme severity the muscular irritation is so great that the patients are quite unable to move, just as in cases of rheumatic fever—with this difference, that the joints do not suffer. The extremities are, as it were, transixed in a half-flexed position. The fever soon becomes of a more asthenic character; the temperature rises to  $104^{\circ}$ ; profuse perspiration sets in; miliary vesicles appear on the surface; the mind wanders; meteorism, diarrhoea, decubitus, hæmoptæ, lobular pneumonia, and effusions in the pleura, may be observed; and at last death ensues with all the symptoms of excessive prostration and irritation of the nervous centres. A fatal issue may take place five days after the

commencement of the illness, but it mostly occurs during the third or fourth week. The average duration of the second stage of trichiniasis is from three to six weeks. If pregnant women are infected, abortion takes place.

"The *third* stage, or chronic trichiniasis, commences as soon as the parasites have taken up their permanent abode in the substance of the muscles, and have begun to coil themselves up and to be encysted. The function of the muscles still remains disturbed for some time, and they may be weak and stiff for months. In a few cases, baldness of the head, desquamation of the skin, and painful furunculi have been observed to follow.

"I have no hesitation in expressing my belief that, on reading the foregoing account of the symptoms of trichina disease, many practitioners in this country will recollect cases of this kind having at one time or another fallen under their notice, and which, in the absence of sufficient information on the subject, have most likely been set down as forms of typhoid fever.

"Trichiniasis in man is probably always caused by eating raw or underdone pork, ham, and sausages. Beef, mutton, poultry, game, &c., never contain trichinæ, and those other animals in which the parasites have been found (viz., the cat, mole, crow, hawk, and jackdaw) are scarcely ever eaten. In Paris, however, where cat's flesh is notoriously served up in certain *cabarets*, men may become infected with trichinæ by eating of such ragouts."

"The *diagnosis* of trichiniasis may, in somewhat severe cases, be easily made during life. The course and the symptoms of the disorder are, in fact, very peculiar. In mild cases there are gastric disturbances, pain in the muscles, and œdema of the face. In severe cases there are, besides these symptoms, swellings of the muscles, fever of a typhoid character, but no tumour of the spleen. There is, moreover, dyspnoea and hoarseness. If, under such circumstances, the patient admits of having a short time ago eaten raw or underdone pork, ham, or sausages, and especially if several patients are affected at the same time in the same house, or in the same neighbourhood, there is every probability of the disease being trichiniasis. Absolute certainty, however, is only to be acquired by finding trichinæ either in the evacuations or in the muscular tissue.

"To show trichinæ in the evacuations is very troublesome to the physician, and to show them in muscular tissue not very pleasant to the patient. If the fæces are not fluid, water must be added to them, and the matter is then brought, drop by drop, upon the object-glass. With a magnifying power of 20 m.d., we may be able

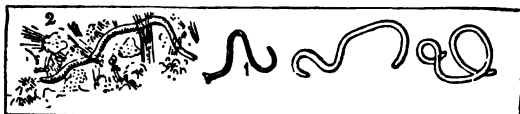


FIG. 3.—Intestinal trichinæ from a young dog, five days after having been fed with trichinous meat. 1 is a male trichina, with cones at its posterior extremity; the others are females. At 2 the parasite is surrounded with fecal matter.

to find intestinal trichinæ, but the examination takes several hours to accomplish, and often yields negative results, although the patient is infected with the parasites.

"For showing the presence of trichinæ in muscles, it is necessary (unless there should be, by chance, an open wound in which a muscle is laid bare) to take out a small piece of any muscle and examine it. The operation may be done by Middeldorff's harpoon, or a small incision may be made at the lower portion of the deltoid, where issues are usually made, and a piece of flesh the size of a lentil may be cut out by Cooper's scissors. If there are any muscular swellings, it is best to take the specimen from the muscles thus affected, and examine it with the microscope. Such a proceeding is by no means dangerous, and quite justifiable. If the disease is severe, the first specimen taken generally contains trichinæ. If certain muscles are more swollen than others, it is best to take specimens from the former. Where the cysts are calcified no magnifying power is necessary. If the trichinæ are encysted, but no earthy deposit has as yet taken place, an ordinary magnifying-glass shows them in a distinct manner, especially if diluted hydrochloric acid is added.

"The only formations which may possibly be confounded with trichina-cysts are the so-called Rainey's corpuscles, which are sometimes found in the muscular fibres of the pig, and have received their name from having been first described by Mr. Rainey. They consist of a dark granular mass, enclosed by a transparent ovoid cyst, and are found imbedded in the interior of primitive muscular fibres, which are thereby somewhat dilated. The nature and mode of development of these formations are at present unknown. It is only certain that they have nothing to do with trichinæ, and they never enclose a worm; so that an accurate observer will always be able to distinguish them from trichina-cysts. Rainey's corpuscles are never found in human muscles.

"The *prognosis* of a case of trichiniasis depends upon the circum-



FIG. 4. — Magnifying power 19. A piece of muscle rendered transparent by the addition of acetic acid. There are two encysted trichinæ in the middle; the others are free.

FIG. 5.

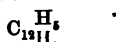


stance whether the person affected has eaten few or many trichinæ. Where few have been eaten, the patients may feel unwell, but they



soon recover. Even in cases of medium severity a fatal issue is rare, and after an illness of a few weeks convalescence sets in. Cases of great severity either end fatally, or the patients very slowly recover, after having been dangerously ill for weeks, and they remain weak and out of health for months afterwards. Of special importance for prognosis are the muscular pains and the fever; if both are severe, the prognosis is mala, or at least dubia.

"As regards the *treatment* of trichiniasis, the results have, up to the present time, not been very satisfactory. Many patients have died in spite of treatment, and those who recovered would probably have done so without special treatment. Professor Friedreich has recommended using the picronitrate of potash, which, in a case he had under his care, appeared to exercise a most beneficial action; but further experiments by Dr. Fiedler and Professor Mosler have shown that this substance, even if given in large doses, kills neither the intestinal nor the muscular trichinæ, nor does it prevent the immigration of the parasites into the substance of the muscles; so that a further use of that remedy in trichiniasis does not appear justifiable. On the other hand, Professor Mosler has found, as the result of careful experiments, that benzine (or benzole) is a poison for Trichina. Benzine was discovered by Faraday in 1825, and is represented by the formula



It rapidly kills lice and other vermin, and seems to have the same effect upon cysticercus and trichina. But benzine is also a powerful poison for large animals and man, and, if used in the treatment of trichiniasis, should be employed with special caution. A rabbit can take ten grains, and a pig thirty grains, and a cow half an ounce of benzine per diem, without its producing alarming symptoms of poisoning. From thirty to forty drops may be given to an adult man *pro dosi*, and, as the smell and taste of this substance are peculiarly nauseous, Professor Mosler has recommended it to be given in the form of "capsules gélatineuses," each capsule to contain ten drops, and one to be taken every two hours. Up to the present time benzine has not yet been employed in trichiniasis in man, but its use in the more severe forms of this affection seems justifiable. It would, however, be more desirable to discover an efficacious drug which is less noxious to the system than benzine.

"In most cases a symptomatic treatment must be resorted to. If the practitioner should be called in soon after the taking of trichinous or merely suspicious meat, an emetic should be given at once. At a later period, neither emetics nor purgatives seem to do much good. The experiments of Fiedler, which have just been published, have, indeed, shown that even large doses of purgatives have not the least influence in removing trichinæ from the intestinal canal, nor to prevent the development of the embryo and their immigration into the muscles. For the muscular pains, tepid fomentations, or frictions with oil of hyoscyamus are useful, or the patients may be subjected to a moderate cold-water cure. If the fever is very severe, mineral acids and digitalis are the best remedies,

and care must be taken to regularly empty the bowels and the bladder. In profuse perspiration and miliaria vesicles, fomentations with vinegar may be employed. If œdema is troublesome, diuretics, especially ol. junip., should be given, which may be done the more unhesitatingly as the kidneys do not suffer in such cases. Albumen has never been found in the urine, even if there was considerable dropsy. At the same time the vital powers must be sustained by a free administration of milk, beef-tea, and, if necessary, alcohol. Animals infected by trichinæ seem to die chiefly in consequence of being, by the painful affection of the muscles of mastication and deglutition, prevented from taking food; and they live much longer if milk and other nutritious fluids are injected into the stomach. The same holds good for man, especially in cases where high fever exhausts the frame. To most patients, the idea "of being eaten alive by worms" is so revolting, that it is better to keep them in ignorance of the nature of the complaint.

"In the third stage of the affection the patient should be treated according to general rules. If anæmia or hydræmia are present, tonics, especially iron, should be freely given; if there is stiffness, weakness, and atrophy of the muscles, tepid baths and Faradization are to be employed.

"The old adage that *prevention is better than cure* was never more applicable than to trichiniasis. This disease would, in fact, never occur in the human species were pork eschewed. This being one of the cheapest meats, it is not likely that its use will be discontinued by the poor, but they might at least be taught the necessity of taking every precaution against the ill effects which may ensue. It has been shown that if pork, ham, or sausages are thoroughly well roasted, boiled, smoked, or salted, all trichinæ which may be present are destroyed. A temperature at which albumen coagulates (144° to 164° F.) kills the parasites; but it is often only the external layers of the joint or the cutlet which undergo this or a greater heat, and the inner fibres generally remain underdone. In these latter, therefore, the blood and albumen are not coagulated; they are soft and of a pinkish hue, and may contain a large number of live trichinæ. On the other hand, it has been shown by the experiments of Küchenmeister, that if pork is salted for a certain length of time, or if sausages are subjected to hot smoke for twenty-four hours, the trichinæ are killed. Cold smoking does not kill them unless it is continued for a long period; but when sausages which have been subjected to cold smoking are kept for a long time, the life of the parasites generally seems to be extinct.

"It now only remains to be seen what measures of precaution should be adopted by communities against trichinous infection. The following points are the most important for this consideration:—1st. Great cleanliness of the stables in which pigs are kept should be observed, and as pigs can only become infected by eating meat or fæces containing trichinæ, they should as far as possible be prevented from taking suspicious animal substances. 2nd. A microscopical examination of pork should be made before it is offered for

sale, either by medical men, veterinary surgeons, or naturalists, who should be paid for their services either by the pork-butchers or by the municipal government. In large towns, each district should have a special slaughter-house for pigs, to which a microscopist should be attached, and no pork should be allowed to pass out without a certificate of its being uninfected. A full examination of one animal may be made in ten minutes by a good observer. In small country places curates, schoolmasters, or others conversant with the use of the microscope, might undertake the office.

"Pork-butchers should not oppose such examinations, as it is they who are in the first instance exposed to the danger. In almost all epidemics which have occurred in Germany, pork-butchers, their wives, children, and servants, were the first to suffer. In several German towns pork-butchers therefore employ competent observers to examine all animals before offering them for sale; and the meat is therefore guaranteed pure to the public."

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ART. 24.—*On the Disadvantages of Mercury in the Treatment of Syphilis.*

By Dr. DIDAY.

(*Revue de Thérapeutique Medico-Chirurgicale*, Sept. 1862; and  
*Edinburgh Medical Journal*, Nov. 1863.)

The distrust entertained with regard to the use of mercury, M. Diday observes, is not of recent date. So early as 1532, Mossa had to inquire into the opinion of those who maintained that it was injurious to the nerves, and he was obliged to allow that it should not in any case be prescribed until it had been determined whether it was likely to do more good than harm. Montanus declared that there was nothing worse for the treatment of syphilis than to prescribe mercury either internally or externally. Benedictus only recommended as a *third resource* the employment of mercurial inunction; for, said he, mercury should never be used by a prudent physician but with fear and caution. Finally, Vigo, as a general rule, treated syphilis for a year by simple non-mercurial remedies. If at the end of this time it had resisted these means, the *morbis gallicus* was declared to be confirmed, and only then mercurial frictions were employed.

"The objections to the use of mercury," continues M. Diday, "do not require to be exaggerated, and I shall not renew the old imputation that it was the cause of all the accidents of syphilis. Neither do I believe with the Germans (although Virchow has twice, and Hirt three times, found mercury in the skeleton), that this metal produces caries. Nor can I agree with those who maintain that mercury gives rise to the headache which often characterizes the evolution of syphilis, nor that it is the cause of baldness. It is certain, indeed, that if given injudiciously, or in too large doses, it may aggravate those accidents which depend upon anæmia,

and which are an effect of the diminution of the blood-globules. In such circumstances, we cannot but expect from such a substance as mercury an increase of the existing evil. Moreover, from its irritant action on the intestinal canal, mercury often contributes to derange nutrition by rendering the digestion imperfect. This production of general debility is sometimes established by a sort of counter-proof more convincing even than the direct proof. A person has syphilis, and, at the same time, takes mercury. He complains of increasing weakness, and of feeling a certain degree of intellectual depression, but in general you cannot tell how much is owing to the disease, how much to the remedy. But suspend the latter, and you will often be surprised with the result. A young man, who had been mercurialized to excess, and kept on low diet, was not recovering, and was becoming visibly emaciated. I stopped the mercury, and gave a generous diet, and at the end of a month he had quite regained his former healthy appearance. In August, 1857, I saw an individual who had been treated for two months, on account of a persistent affection of the tonsils, with protoiodide of mercury, in very rational and very moderate doses, but his cure was not progressing. By way of experiment, I told him to discontinue the mercurial. Eight days afterwards he returned to see me, and exclaimed, on entering my room, 'I feel myself another being; since I have discontinued the medicine my strength has been returning.' A high authority confirms this opinion. Ricord places the early treatment of mercury among the causes which may lead to the chancre assuming the phagedenic type. Mercury, then, according to our master, has a real influence upon the constitution; and this influence, it is evident, can only be debilitating.

*" Ptyalism.*—The effect of mercury upon the buccal mucous membrane is well known, but it is incorrect to believe that we can prevent it, or overcome it with certainty, by moderating the doses, by discontinuing its employment, or by the prophylactic use of alkaline chlorates. I do not at present allude to those atrocious salivations which were formerly regarded as the criterion of the efficacy of the remedy, which now-a-days we all dread, yet of which, in spite of all precautions, we occasionally see examples. I only speak of those ulcerative erosions which attack the free border of the gums, uncover the teeth, and give to the breath a disagreeable odour. This condition is often, very often, the result of the ordinary doses of mercury. It is seen in the course of the most rational treatment, in spite of the advice given and acted upon to stop the drug as soon as the gums are touched. We can alleviate this condition, no doubt, and end by curing it; but in many persons the cure is tedious, and the habit of salivation having been produced; it is liable to recur for years, and sometimes the effects are never entirely got rid of.

*" Dyspepsia.*—The injurious effects of mercury upon the intestinal canal are obvious, but different from the ptyalism: in this case the effects usually observed are slight. Suppose a person who is taking mercury were to suffer from an intercurrent diarrhoea, weight in the epigastrium, slight loss of appetite, a little nausea or vomiting;

I should not blame the mercury for this; for on the same ground we should be obliged to discontinue the use of tartar emetic, copaiva, and even iron. But what I allude to, and what I deplore as the results of mercurialization, are cases of dyspepsia, well-marked and durable, which are sometimes produced under its influence. This accident does not interest me so much from its frequency as from the difficulty or impossibility of preventing it. Suppose a patient taking mercurial pills, and bearing them moderately well. To render them more tolerable, you adopt the various means in use; you discontinue the remedy from time to time; you associate opium with it; you administer after each pill a demulcent drink; you regulate the diet and the period of the meals. These means seem to be effectual; in spite of some slight inconveniences (which the physician must always expect when he writes the word *mercury*), everything seems going on well, and you persist, and with propriety, in preferring ingestion of the remedy by the mouth to another mode of absorption more innocent, but less efficacious. But soon what was merely a temporary inconvenience becomes habitual; digestion is laborious; weight in the epigastrium after taking food is constant; certain articles of diet cause indigestion; constipation, eructations, loss of appetite, or a voracious appetite, complete the picture. Little by little emaciation takes place, the temper becomes gloomy or irascible; in other words, dyspepsia is confirmed, and makes progress in spite of the immediate discontinuance of the mercury, and in spite of all your care. Five of my patients during the last three years have been examples of this affection. Although the treatment had been conducted with all possible precautions, they offered the severe and varied symptoms produced by dyspepsia. One of them, at the head of an educational establishment, had, although becoming emaciated, so ravenous an appetite, that the four meals he had been in the habit of taking with his young pupils were no longer sufficient. A second had become so feeble that a constant precordial anguish and frequent fainting fits testified to the extreme insufficiency of his nutrition. In the case of the most fortunate of my patients, two years, one or two seasons at Vichy, and the most careful dietetic management, have been required to effect a cure. The others still suffer; they have, be it understood, lost confidence in me, and they never meet me without their expression testifying the gratitude which they and I owe to the *remedy* which has produced such relations between us.

"*Trembling*.—This condition I have several times observed developed under my own eyes as a result of the moderate administration of the remedy prescribed either by myself or by others. One of my medical brethren, who had contracted syphilis in delivering an affected woman, wished, in order to spare the intestinal canal, to use mercury externally. After the *third* friction, he felt an involuntary trembling of the hands, especially noticeable in writing. By immediately suspending the remedy he got rid of this symptom, and under my direction he recovered from his disease without the use of mercury. A gentleman, forty-five years of age, as the result of a mercurial treatment both indispensable and moderate, had con-

tracted such a trembling that in writing he put *p* for *b*, and so on. I could cite other cases of this kind much more severe; among others, that of a poor lawyer's clerk, whose history I may mention. Under the direction of a very able practitioner, the young man had been ordered, on the 18th July, 1857, to take one grain of protoiodide of mercury daily, on account of syphilis which had lasted for a month, and which I had considered myself warranted in treating without mercury. He continued the protoiodide till the 9th of September, when it was discontinued on account of a slight salivation. He resumed it on the 15th of September, but on the 23rd he described his state as follows:—‘I feel itchings over the whole body, most marked on the shoulders, the knees, the sides of the chest, and especially the fingers, accompanied with a feeling of stiffness, and such cramps as render me quite incapable of regulating my movements, so as to be able to write, or to button my clothes.’ At this time the appetite and sleep were normal, there was no fever, and no intellectual disturbance. In spite of all my care, and the most various modes of treatment, to which the patient most willingly submitted, in order to be able to resume his employment, the trembling persisted for more than two months. On the 18th of November, he told me that when he wrote for a short time his hand became agitated, and refused its service. As to the syphilis, it only showed itself in the form of a few patches on the tonsils, and around the anus, and of some lichenous patches on the glans penis. The mercury was not resumed, and I saw the patient for the last time on the 12th February, 1859, perfectly cured.

“*Mercurial Insanity.*—Two circumstances will for long prevent us from obtaining on this subject a positive solution. In the first place, we no doubt see persons go mad during or after the remedial action of mercury. But are there more madmen among a given number of persons who have been mercurialized than of those who have not? So long as accurate statistics are wanting, the supporters of mercury will have a right to maintain, that though this agent does not preserve from madness, it does not predispose to it. In the second place, few persons take mercury without having syphilis. If one goes mad, whether would it be correct to accuse the disease or the remedy? This question is still more obscure than the former; it is indeed almost impossible to elucidate. I may cite a single case in illustration of this point. About the middle of 1856, a medical student at Montpellier had two gonorrhœas and then a chancre. Believing himself infected, he was for a long time (as long as the gonorrhœas lasted) treated with the pills of Dupuytren and the mixture of Van Swieten. In November, 1857, this young man returned to Lyons; his family had never had any symptom of mental alienation, but it was noticed that there was a certain moroseness about him and a marked loss of memory. These symptoms went on increasing. He left Lyons, and had an acute attack, which was disguised under the name of a brain fever; he became permanently maniacal, and died in an asylum. I have observed, in my special practice, all the varieties, all the degrees of mental alienation. In 1854, I treated a young man of fair complexion on account of some

obstinate patches of impetigo on the scalp. At his special request, although he had no other symptoms, I mercurialized him, and he was affected to such a degree that after several attacks of stomatitis, the crown of one of his molar teeth became friable and dropped off. This young man, whose disposition was remarkably cold and positive, became hypochondriacal, had hallucinations, sought solitude, and shunned his friends. He thought no more of his syphilis, but told me perpetually that he felt himself going mad. He returned to his native place and wrote me several letters which indicated progressive mental alienation, but I have not heard any more of him. Another young man, of an excellent and very healthy family, persisted in taking mercury on account of syphilis, which he would not believe to be cured although there were no longer any symptoms of it. At first he manifested irregularities of disposition, then eccentricities more and more strange, then true hallucinations. A fly could not settle on his nose, an announcement could not be put into his hand in the streets, without his asking why his enemies persecuted him so. He died quite mad. A merchant had had several attacks of syphilis: anxious to resume a life of pleasure, he got himself cured as speedily as possible; but on the disappearance of the local accident, he mercurialized himself largely, in order "to destroy the virus." At the age of thirty-two he presented the most unmistakable signs of mania, and finally subsided into a condition of dementia. Every one has heard of the deplorable death of a member of the bar, who died lately in an asylum. But what is not generally known is, that being on the eve of marriage, and being anxious to be cured of some persistent fissures on the edges of the tongue, he had taken mercury to a large extent. He had applied to Ricord, to my friend Dr. Gromier, and to myself, carefully concealing from each of us the fact of having consulted any one else, and his only object seemed to be to get as large a quantity as possible of mercury prescribed."

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ART. 25.—*On a Valuable Diagnostic Sign of the Existence of Acquired Syphilitic Taint.*

By DR. HENRY CRITCHLEY BRODRICK.

(*Madras Quarterly Journal of Medical Science*, Oct. 1862.)

Whilst reading a *résumé* of M. Ricord's *Researches in Syphilis*, translated by Maunder, and called "Ricord on Chancre," Dr. Brodrick's attention was particularly drawn to one symptom the author casually alludes to as indicative of the existence of constitutional syphilis—viz., *substernal tenderness*. Very little stress was laid upon this sign, so it seemed to him that M. Ricord attached no very great importance to it. Dr. Brodrick believes the importance to the practical physician of the discrimination of this one aid to diagnosis to be incalculably great. Substernal tenderness can only be detected by pressure over the bone, and when searching for

it formerly, Dr. Brodrick used to *knead* the bone with the fore and middle fingers, carefully, from the manubrium to the xyphoid cartilage. In a case of suspected constitutional syphilis, if the patient be asked if he has got a pain in his breast-bone, he will probably answer in the negative. The medical man should then *knead* the sternum carefully and gently along the whole of its course, and the tender spot will generally be found at the commencement of the lower third. With much practice and observation in this class of cases, Dr. Brodrick now generally succeeds in touching the tender spot at once, to the great surprise of the patient, previously quite ignorant of the existence of this tenderness. If substernal tenderness be found, he believes we are quite safe in assuming that the subject of it labours under acquired venereal taint, which may have been masked by divers symptoms, and be quite unsuspected both by the patient and the surgeon. It often furnishes a clue to the cause of very anomalous symptoms, and a most invaluable guide in treatment. For the past eighteen months Dr. Brodrick has been *kneading* patients' sternums most diligently, and has been not a little laughed at for the same by those not previously aware of the significance of substernal tenderness. The native doctors attached to the Malwa charitable dispensaries, which he superintends, all now practise this palpation in suspected cases, to the very great benefit of their patients. Although the existence of substernal tenderness is, he believes, unerringly significant of venereal dyscrasia, it must be borne in mind that a patient may be constitutionally syphilitic without manifesting this particular sign. Substernal tenderness is, no doubt, produced by a periosteal inflammation, slight in degree, and may be in its immediate effects, such as pain and tenderness, inappreciable to the patient. The iodide of potassium must be prescribed, under which the tenderness quickly subsides with other symptoms, which, mysterious before, this sign teaches us to decipher. Dr. Brodrick states that he has hunted diseases to their source at once in scores of cases, since he became aware of the existence and the importance of this diagnostic sign, and the rapid improvement of such cases under the specific treatment indicated above has invariably confirmed his diagnosis. He speaks confidently on this point. Constitutional syphilis prevails very largely in Malwa, so that Dr. Brodrick has a large field in which to practise palpation of diseased sterna amongst the sick coming to his dispensaries. He has had a limited experience of this diagnosis amongst Europeans, but has found substernal tenderness in at least twenty cases, and in as many the sign has led to the successful treatment of the disease it indicated. In a suspected case, then, Dr. Brodrick advises us to look for this tenderness. It will usually be found at the commencement of the lower third, occasionally in the upper third, and very seldom in the space intermediate. When it is once made out, the subject of it should immediately commence taking the iodide of potassium.

Dr. Brodrick, after some remarks on the absence of any persistent ill effects from the use of this drug in large doses, briefly alludes to some other signs of acquired constitutional syphilis, which, too, are alluded to by Ricord as "inguinal and cervical adenite," in other



words, chronic induration and enlargement of inguinal and cervical glands. He believes that whenever subaternal tenderness is found—ergo, constitutional syphilis—some of the upper tier of inguinal glands will be found to be enlarged, hard, movable under the finger, and painless, and never single. Ricord calls this affection “multiple adenite.” Enlargement of the posterior cervical glands is not so easily detected, but if sufficient pains is taken in the search, “posterior cervical adenite” may be invariably found. Such an adenite may very commonly be found between the posterior border of the sterno-mastoid and the anterior border of the trapezius muscles. Here, then, he remarks, we have three very valuable diagnostic signs of constitutional syphilis; the most important is the subaternal tenderness. Dr. Brodrick suggests that all medical officers who are employed in the examination of recruits, European and native, might advantageously bear these facts in mind; the knowledge of them might prevent the enlistment of many diseased recruits, men destined during their service to haunt the hospitals and to be eventually invalidated.

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#### ART. 26.—*Treatment of Rheumatism with Sulphur.*

By Dr. RENARD.

(*British Medical Journal*, Jan. 30, 1864.)

Tendinous rheumatism, according to Dr. Renard, differs from acute rheumatism by the absence of the general symptoms, and from the chronic by the presence of local inflammatory symptoms. Dr. Renard suffered from this complaint himself after an attack of acute rheumatism, for which he was copiously bled. The parts affected were the tendons of the hamstring muscles, and no improvement resulted after a long course of diaphoretics, camphor, terebinthinate, and other liniments, and the administration of the solanaceæ. At last Dr. Renard saw a passage in an English medical journal, stating that persons suffering from rheumatism in the legs had only to dust the inside of their stockings with sulphur. He immediately employed this simple remedy, the sulphur being the commercial flowers of brimstone, which contain some sulphurous acid. The curative effect was very well marked, for Dr. Renard walked in the evening, then renewed the sulphur in the stockings before sleeping in them, found himself very much relieved the next morning, and nearly quite cured on the morning after. A few days later he left off the brimstone, and the pain reappeared in the soles of the feet, but yielded very soon to the reapplication of sulphur. Since the year 1857, when he was first attacked, the same experiment was repeated every winter when he was suffering from chronic tenodynia, either in the hams, the heels, or the elbows. He felt, under the influence of the contact of the flowers of brimstone, the skin becoming hotter, slightly excited, and more disposed to sweating; and as soon as this effect was produced the relief of the pain seemed to be immediately marked. Whatever may be the explana-

tion of the manner in which sulphur asserts its curative agency, Dr. Renard affirms that it has a beneficial effect upon the rheumatic pains of the tendons, and that this action is the more rapid and certain in proportion as the tendons are more superficial and the sulphur is kept more closely over the painful parts.

## SECT. II.—SPECIAL QUESTIONS IN MEDICINE.

### (A) CONCERNING THE NERVOUS SYSTEM.

#### ART. 27.—*On Inflammation of the Brain from Otitis without Caries.*

By Dr. GRUBER.

(*Wochenbl. der Aerzte in Wien*, Nos. 22, 23, 1862; *Medical Times and Gazette*, Aug. 1, 1863.)

Dr. Gruber, one of the physicians of the Vienna Hospital, read a paper upon this subject at the Medical Society. While admitting the justice of Lebert's statement, that disease of the ear is usually propagated to the brain owing to the propinquity of the sinuses of the dura mater, yet the question remains whether such propagation would take place in simple internal otitis unaccompanied by caries. A case which has occurred in the hospital leaves no doubt upon the subject. Inflammation from external injury arose within the right ear (which had previously been quite healthy), and extended to the right transverse sinus, and thence, by means of the inferior cerebellar veins, to the cerebellum. An acute pleurisy, with purulent exudation, terminated the patient's life. The most careful examination of the temporal bone and the ossicular failed to detect the slightest trace of caries. The author is not aware of another case being on record, in which, independently of any affection of the bones, the course of the inflammation has been so well marked. This case shows the importance of early derivative measures, as repeated leeching, the cautery, &c., and also of securing a sufficiently large opening in the membrana tympani for the discharge of the pus. In by far the great majority of cases the sinus transversus is the means of propagation, and only seldom one of the sinus petrosi. This can only arise from the anatomical relations of the sinuses to the cells of the mastoid process: and to elucidate this Dr. Gruber has made numerous autopsies of healthy ears, and has found, as a general rule, that the entrance to the cells is not in the posterior wall of the cavity of the tympanum, but in the posterior section of its internal wall. There usually is found an aperture from one to three lines long, which is prolonged into a canal that extends to the series of cells in contact with the transverse sinus. Sometimes there is also a communication with these cells through the posterior wall of the tympanum. In the new-born infant the few large cells of the process are but a continuation of the tympanum, and are separated from the

sinus by a pretty thick wall of spongy bone. This wall, in proportion as the number of cells of the process increases becomes thinner, and is the thinnest at the period which elapses between the cessation of the cellular formation and the recommencement of their ossification. It is sometimes partially wanting, the wall of the sinus being in contact with the lining of the cells of the mastoid process. In older persons the wall again becomes thickened, sometimes to the extent of a line or more. This explains why it is that internal otitis is most liable to induce fatal inflammation of the brain between the ages of eighteen and thirty, the age of forty-six being the oldest at which it has been known to do so. So, too, notwithstanding the frequency of otorrhœa in children, such fatal issue is proportionally very rare, inasmuch as the wall of separation, though spongy, is also thick in proportion. Professor Arlt remarked that the veins must not be regarded as the sole source of propagation of the inflammation, as this may take place also by means of the thin bony wall, as might be expected from the analogous conditions under which orbital abscess is formed.

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ART. 28.—*On Epidemic Cerebro-Spinal Meningitis, or Congestive Fever, so called.*

By Dr. J. BAXTER UPHAM.

(*American Quarterly Journal of the Medical Sciences*, October, 1863.)

A form of continued fever, which has been designated Epidemic Cerebro-Spinal Meningitis, has "of late years" prevailed extensively and very fatally in many parts of the United States. Dr. Upham describes from his own observations, and from the notes of his associates on the medical and general staff of the General Hospital at Newbern, North Carolina, an outbreak of the disease among the troops encamped in the vicinity of that town.

"The town of Newbern is situated upon the river Neuse, at its junction with the Trent, some forty miles from its entrance into Pamlico Sound. The town is built upon a flat, sandy soil, raised only a few feet above the water. The surrounding country is level, alternating with sandy plains and swamps, for a mile or two from the outskirts of the town, and then begins the great, almost impenetrable pine forest, with its marshes and tangled undergrowth. The climate is, for the most part, mild and salubrious in winter and spring, but hot, humid, and subject to malarial influences in summer and autumn.

"The troops were encamped mainly just beyond the town, in the driest practicable spots, and sheltered partly in tents or barracks. The barracks were built of green stuff (dry timber not being within reach); the logs, mostly of hard pine, being taken immediately from the forest, or from out the water where they had been lying for some weeks. The barracks were necessarily cold and damp and redolent of pitch and paludal moisture, while, from their size in proportion to their inmates, and their internal arrangement

generally, the supply of fresh air within the wards was entirely inadequate, and the general diffusion of light and heat throughout them impracticable.

"The regiment which suffered most was nearest the bank: in its immediate vicinity were a couple of small marshy bogs, through which flowed a stream of water. The water mainly used for drinking and culinary purposes was brackish and unpalatable; it was obtained from wells in the vicinity of the camp.

"The attack of the epidemic was usually sudden; the patients most commonly continuing on duty, without complaint, up to the very period of their seizure. Its subjects were, in most instances, the robust and apparently most healthy individuals, between the ages of eighteen and twenty-four years.

"The attack was ushered in with a sense of chilliness; headache, oftentimes experienced chiefly at the occiput; dizziness, pain in the back and limbs, occasionally very severe, attended sometimes with rigors, and with nausea and vomiting. A sense of stiffness in the muscles of the face and neck was often an early symptom. Some attacks commenced like a common cold, with a tendency to paralysis of the tongue, and some of the muscles of the face, while the respiration would be difficult and irregular, giving cause to fear congestion of the lungs. Early in the attack, tenderness at the nape of the neck and along the spine was often present. The skin was usually moist, but hot; the face suffused, often of a dusky hue, with distortion of features, congested and suffused eyes. For the most part, there was not active delirium, but rather perversion of the intellect, with dulness and indifference to outward objects. From this condition the patient could be roused, and then would answer questions correctly. The tongue had, at first, a white, creamlike coating, which subsequently became yellowish or brown at the centre and base, and, more rarely, towards the close of the attack, dry and fissured. There was loss of appetite, but not usually very urgent thirst. The action of the heart was irregular, sometimes tumultuous; to it the pulse did not always respond. In most cases, the latter was accelerated—not strong—occasionally intermittent. The bowels were regular, or alternately loose and confined. Petechiæ, very similar to the true typhus eruption, were often present upon all parts of the body excepting the face; they were persistent under pressure, and varied in hue from a very dark raspberry to the blackness of true petechiæ. Purpureal spots, of large size and abundant, were sometimes present, and were always a grave symptom. There was no marked tenderness of the epigastrium or abdomen. The more protracted cases were attended, towards their close, with sordes of the teeth and lips, and involuntary evacuation of urine and fæces. Decubitus was mainly on the side, with the head often retracted, and the neck rigid and stiff—partial opisthotonos. There was invariably great restlessness and jactitation. As an accompaniment, and occasionally sequel to the disease, iritis and synovitis were observed in several cases—in one pericarditis. The patients often died without much indication of exhaustion.

"The foregoing constituted the more prominent and constant symp-

toms of the disease—they were never all observed nor even the majority of them to be present in the same case. Some singular and anomalous symptoms were occasionally met with, as a pleasing delirium, with loquacity, priapism and decidedly erotic desires. In a few very severe cases no moan or sound of any kind escaped the patient, but the restlessness was fearful, and ceased only at death. In other cases there was much moaning. Stiffness of the muscles of the neck and back, or some perverted action of the muscles of the face, amounting at times to spasm, was almost pathognomonic.

"The duration of the disease varied from less than thirty-six hours, to three, four, or six weeks, and even longer. According to Dr. Upham's observation, its most usual duration was from three or four to seven days.

"In regard to the prognosis, this was in general unfavourable. Of about forty cases received into the Stanly General Hospital, twenty-eight proved fatal. Of the five cases referred to by Dr. Kneeland, all died, as did also the fourteen communicated by Dr. Jewett. Dr. Cowgill reports five cases of recovery out of twelve, being the largest ratio of recoveries in proportion to the number of cases treated.

"The anatomical lesions were chiefly confined to the brain and spinal cord. When death occurred within two or three days, there was commonly opalescence of the upper surface of the cerebrum—seemingly of the subarachnoid fluid; increased vascularity of the meninges of the brain and spinal cord, especially the pia mater; a large increase of serum, clear or turbid, and mixed with flocculi of lymph, in the subarachnoid space and ventricles, with, most usually, even in cases of the shortest duration, an abundant exudation, at the base of the brain and medulla oblongata, of thick, yellowish, apparently semi-organized lymph. Conjoined with these lesions there was more or less passive congestion of the lungs, increase of the pericardial fluid, and occasional engorgement and enlargement of the liver or spleen. When the disease had lasted from seven or eight days to several weeks, the deposits on the brain were usually more marked, especially at its base, around the pons Varolii, in the sulci of the cerebrum and cerebellum, covering the surface of the oblongata, and extending down upon the spinal cord, sheathing it, in some cases, throughout its entire extent. The deposit was either puriform, or concrete and semi-organized, and, frequently, from two to three or four lines in thickness. It was found also in the ventricles, especially in the posterior cornua of the lateral ventricles, in its concrete form, or else tingeing and thickening, with an opaque greenish pus, the serous fluid of the whole cavity. The meninges of the brain, the pia mater especially, showed, not unfrequently, evidences of congestion. The only lesions noticed in the thoracic and abdominal viscera, were passive engorgement of the lungs in their depending portions, the occasional presence of lymph in the pericardium and ventricles of the heart, and sometimes enlargement of the liver and spleen."

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ART. 29.—*On the Use of Ammoniacum in Delirium Tremens, &c.*

By M —.

(*Journ. de Chem. Méd.* ; and *Journ. de Méd. et Chir. Prat.*, Mars, 1864.)

Each time a man given to drunkenness suffers from strong nervous disturbances, it is necessary, according to M. Piorry, to use, as a test, a dose of ammoniacum. If these disturbances resist this treatment, they are not the result of drink, and then the diagnosis must be taken from some other cause. If, on the contrary, the first opinion is well founded, the nervous disturbances are dissipated with remarkable rapidity.

Two cases are given in illustration: the first by M. Piorry, the second by M. Oscar Rapin:—

CASE 1.—A strong man, aged forty-five, was in the habit of drinking daily two or three quarts of white wine. Up to the end of last February he has been in perfect health; but about the 6th or 7th of March, without having drunk more than usual, he felt, on getting up, a numbness in the left leg and arm, so strong that he could not dress himself. This loss of motion had been preceded by pain in the right side of his head, with trembling of his limbs. The previous treatment consisted in bleeding, sinapisms, and frictions: all that had made no improvement. When he entered the Charité, this patient could neither walk nor use his left arm; his sensibility was greatly reduced.

For two days M. Piorry waited: he merely observed the state of his patient, and seeing that he remained in the same state, he gave him a dose containing twelve drops of liquid ammoniacum to four and a half ounces of distilled water and one ounce of simple syrup.

Three days after the administration of this dose, the amelioration was notable. The patient could walk and use his arm. Nothing remained of his previous state except a little trembling, which occasioned a certain degree of lameness.

CASE 2.—A man named X—, from Valleyres sous Montagne, during the absence of the family doctor, came to consult me about his brother whom I did not even know by sight. I learned that he was a strong man, aged forty-two, of a nervo-sanguine temperament, very irritable when under the influence of drink, which, however, was not a habit with him. But every year at the village fête, which had just taken place, he used to make an exception to his general line of conduct, which use to cause in him very serious disturbances, such as trembling of the limbs, hallucinations, furious delirium: in this state the patient used to break everything that could come within his reach.

I did not then know the case published by M. Piorry, but the preceding details were sufficient to make me recognise the similitude of such disorders, and I prescribed, to be taken by tablespoonfuls every hour, the following mixture:—

Distilled limetree water	. . .	Six ounces.
Liquid ammoniacum	. . .	Twenty-five drops.
Syrup	. . .	One ounce and a half.

The next day I saw X— again. “Am I to continue?” said he; “the bottle has already produced its effect; my brother said at the fourth

spoonful that it did me good, and that I no longer disturbed the house by my cries." I advised him to get another dose, and under the influence of its action the amelioration was still more sensible, which allowed of the patient being carried to the hospital, where every year he was periodically carried to be treated for his delirium tremens.

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ART. 30.—*A Case of Acute Myelitis terminating successfully.*

By Dr. JOHN W. COUSINS, Physician to the Royal Portsmouth Hospital.

(*Medical Times and Gazette*, February 20, 1864.)

CASE.—J. H., aged thirty-six, a gardener, was taken ill after watching in his field during a wet night. I saw him on November 14th, 1862, and he then complained of pain in all his limbs and over the chest, together with a sensation like a cord tied round his body. His sleep was disturbed by "spasms" in his legs. He looked flushed and anxious; pulse 100; skin hot; and tongue coated. The next day the following notes were taken:—General hyperæsthesia is now present (especially over left side of body), and loss of power over both legs, which are frequently drawn up by spasmodic reflex movements. The left side of the body is still very painful, and his left arm and both legs are the seat of uneasy sensations, which he compares to "the gnawing of dogs." A warm sponge applied over the spine, from the dorsal region downwards, excites an intense sensation of burning, and the spinous processes are tender on percussion. There is no loss of power over the arms, and the control over the bladder is natural. The treatment commenced with a quarter of a grain of extract of belladonna every six hours, and the patient was placed on milk diet.

November 20th.—The febrile symptoms have all subsided, and he is able to stand. Reflex movements of the legs much diminished. The belladonna was now combined with ergot of rye; blistering fluid was applied on each side of the spine, and a better diet ordered.

25th.—Slight hyperæsthesia still remains over left arm and leg. He can move his legs now freely when lying down. To-day he attempted to walk, but his gait is characteristically myelitic. His general health is improving. The pills were now prescribed twice a day, with a mixture of iodide of potassium and decoction of bark.

29th.—Patient now walks much better. Hyperæsthesia only slight over left leg. He continued daily to improve until the middle of December, when he was discharged cured.

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ART. 31.—*Cases illustrating the Use of Digitalis in the Treatment of Mania.*

By Dr. C. L. ROBERTSON, Medical Superintendent of the Sussex Lunatic Asylum, Hayward's Heath.

(*Quarterly Journal of Mental Science*, April, 1863.)

CASE 1.—*General Paresis, with maniacal symptoms, the result of intemperance and exposure to weather—Noisy and restless nights, dirty and destructive habits—Rapid abatement of the symptoms under the use of Digitalis.*

W. B—, No. 613, admitted at Hayward's Heath, April 17th, 1862, widower; age sixty-nine. Shoemaker.

*State on admission.*—Bodily condition much reduced; gait tottering and unsteady; pupils contracted, irregular; pulse rigid and frequent; speech hesitating, and articulation imperfect; tongue clean, but large and flabby. He has been insane for two or three months before admission; the cause of his insanity is not certain, but supposed to be from intemperance and long exposure to weather, while doing night duty as a policeman. Has various delusions; that he is king of the earth, &c., and as to his power and wealth there are no limits to them. Nights restless, painting the wall of his room with his excrement, constantly undressing himself during the day, tearing both clothing and bedding.

*Progress.*—He was placed on 3ss of the tincture of digitalis three times a-day, which was continued for three weeks. His pulse was in a few days reduced to 80, but it gained in strength. Slept well at night, became clean and quiet in his habits. This improvement continued up to his death, with occasional threatening of excitement, which invariably yielded to a few 3ss doses of digitalis. His bodily health improved. He ate and slept well, was clean in his habits, and contented in mind. He gradually passed into a state of dementia, but the delusions as to his rank and importance continued strong to the last. In this case the effect of digitalis in calming the excitement, and relieving the destructive and dirty habits, was most prompt and constant, and the patient, under its occasional use, passed his days in comparative comfort to himself and those around him. His mental and bodily powers gradually failed, and he sank calmly to his rest on February 11th, 1863.

CASE 2.—*General Paresis, with maniacal exallation, the result of irregular and intemperate habits—Restless and noisy nights, dirty and destructive habits—Permanent abatement of the symptoms, followed by improved health and mental quiet under the use of Digitalis.*

J. W—, No. 588, admitted at Hayward's Heath, February 3rd, 1862.

*History.*—Married; age thirty-eight. A butcher. A fair man, of middle and strong bodily frame; expression vacant; eyes grey.

He was confined about three years ago in a private licensed house. The cause of his first attack was his irregular and intemperate habits. The history obtained of him at another licensed house, from whence he was transferred here, was of the most unfavourable character. He was represented as exceedingly dirty and destructive in his habits and propensities.

*State on admission.*—On admission he was full of delusions as to his wealth and importance. Very incoherent; his gait unsteady; pulse frequent and feeble; tongue tremulous; face pale; pupils contracted. He was noisy and



restless day and night, dirty and destructive in his habits, in which state he continued up to February 7th, without any abatement of the maniacal exaltation.

*Progress.*—On that day he was placed on ℥ss of the tincture of digitalis three times a-day.

9th.—Had a good night, but was wet; he is pale and feeble this morning. The digitalis was continued at intervals until March 10th (the quantity varying with the urgency of the symptoms from ℥ss to ℥iiss daily), at which period he is reported to be much improved for the last few weeks. He sleeps well, much stronger and calmer, speech improved, appetite good.

April 10.—Much better; gait stronger and more steady; getting quite stout, and clean in his habits. The use of the digitalis was continued till December, 1862, in daily quantities varying from ℥ss to ℥iiss, the average being ℥j in the twenty-four hours. Under this treatment his bodily health improved, and his habits became clean. The mental powers also gained some vigour, and the delusions as to his wealth, &c., greatly lessened. All excitement left him. He is now slowly passing into a state of dementia; he is able in fine weather to take open-air exercise, and takes his food well. He is quiet at night, and sleeps in a dormitory. His speech is failing, and the physical symptoms of general paresis are marked.

In this case the effect of digitalis in rapidly relieving the maniacal complications (and for which alone it was given) was undoubted. The length of time its use was continued without injury to the health is worth notice.

**CASE 3.**—*Mania with destructive habits, violence, delusions as to wealth and property—Failure of the opiate treatment—Use of Digitalis, physiological symptoms of the drug; removal of all excitement, destructiveness and want of sleep (threatening of General Paresis?).*

R. D—, No. 660, was admitted at Hayward's Heath August 16th, 1862.

*History.*—Married; age fifty-seven. Formerly innkeeper, lately farm labourer, a man of intemperate habits; has for the last six months been considered by his friends as of unsound mind. Was apprehended a few days previous to his admission for stealing a horse, of which animal he openly took possession. No hereditary insanity in his family. Education fair.

*State on admission.*—Man of middle stature, strong muscular habit; expression restless, conversation incoherent, maniacal exaltation. Speaks of his great wealth, of the farms and other property which he owns; also states that his object in coming here was to hire one of my farms in Scotland; collects all sorts of rubbish in his pockets. Tongue very foul; pulse full and frequent; face flushed. Ordered morph. hydrochl., gr. j at bed-time, to be followed in the morning with ol. ricini ℥j.

*Progress.*—August 16th.—Had a very restless night, noisy and incoherent this morning, and disposed to be violent and destructive to his clothing.

The morphia was continued every night until the 26th, without any diminution in the maniacal exaltation. On that day he was placed on ℥ss tinct. digitalis three times a-day, which was continued until September 10th, when the physiological symptoms of the drug, in pain in the abdomen, feeble pulse, cold surface, and pale anxious expression of the countenance, had set in. On August 31st (while under the influence of the digitalis) the incoherence, noisy, violent, and destructive habits had entirely subsided. He also slept well at night, but the delusions remained in force. The digitalis was omitted on September 10th, 1862, and he has now for the last year continued free from excitement and manageable; has slept well, and eaten his full diet, and he has for the last nine months been employed in the mat-shop. The delusions still continue, but he rarely refers to their

existence. The physical symptoms of general paresis have not yet shown themselves.

**CASE 4.**—*Symptoms of Incipient General Paresis following an injury to the head—Maniacal excitement relieved by Digitalis—Improvement in general health—Employment at learning shoemaking.*

W. B—, No. 760, admitted at Hayward's Heath, July 1st, 1863.

*History.*—A mariner; age forty-seven; married. Had a sun-stroke some years ago. Later injured his head by a fall from the mast; since that, his manner and conduct are said to have been strange and odd. He has become gloomy and depressed, and has also frequently taken possession of property, pigs, &c., not belonging to him.

*State on admission.*—Much excited, and disposed to be violent; pulse 120; face flushed; tongue foul and tremulous; gait unsteady; pupils contracted. Full of delusions as to his property and importance; his adventures in the Crimea (where he never was), &c.; noisy all night, using threatening language to the attendants. Was at once placed on  $\mathfrak{ss}$  of the tincture of digitalis three times a-day.

*Progress.*—The violence and excitement continued until July 6th, when a marked improvement for the better occurred. He slept at night; says he is perfectly well; that he is master of the ship, and that he will punish whoever he pleases, and he gives this as his reason for interfering with the other patients. Pulse is of good strength; some indistinctness of speech.

He continued three  $\mathfrak{ss}$  doses of the tincture of digitalis until July 30th, when it was omitted, as he had for some time continued free from all excitement. On August 4th symptoms of violence recurred, and he again resumed the use of the digitalis. Pulse kept about 80, strong and steady.

Sept. 5th.—Some indistinctness of speech. When led to talk of his imaginary exploits becomes excited. Gait dragging.

7th.—Sent to the shoemaker's shop and the digitalis omitted. Since then he has kept calm and orderly in his conduct. On one or two occasions a slight return of the excitement has yielded to  $\mathfrak{ss}$  of the tincture of digitalis at bed-time.

**CASE 5.**—*Felony caused by incipient General Paresis—Mania, violence, dirty and destructive habits—Use of the digitalis—Poisonous symptoms of the drug; reduction of quantity—Marked improvement regularly alternating with the use of the Digitalis—Rapid increase of flesh and weight.*

J. J—, No. 758, admitted at Hayward's Heath, June 26th, 1863, under a warrant from the Secretary of State.

*History of the case.*—Age thirty-five; single. Admitted from Petworth prison, where he had been under sentence (not for the first time) for felony. The governor stated that he had been very troublesome and noisy, and had had little or no sleep since June 17th.

*State on admission.*—*a. Bodily state.* In reduced health; pulse 120, feeble; pupils irregular; tongue pale and tremulous; muscles of face in constant action; speech thick; habits dirty, disposed to plaster himself with his excrement; appetite good.

*b. Mental state.* Restless, noisy, and incoherent. Expresses great ideas of his wealth and power. Says he is a hundred ton man, and proposed to show his strength by lifting the fire-guards, &c. Says he weighs sixty millions of tons, that he has not eaten since 1834, &c. Beats his head and face, to show how little blows affect him, tears books and clothing, is in a per-

petual state of agitation and excitement, and spent some hours of the first two nights out of bed, shouting, and knocking at the door. His bedstead had to be removed.

*Progress.*—On June 23th (third day) he was placed on 3ss of the tincture of digitalis three times a-day. On the 29th the symptoms were much as before, and he had another restless night. On the 30th he was much calmer, and slept quietly up to 2 A.M., when he became very noisy, saying he was destroying millions of human beings.

July 1st.—Very destructive to his clothing and filthy in his habits. Had a better night. Digitalis continued. These symptoms gradually yielded to the treatment, which was continued up to July 22nd, when the physiological symptoms set in. On the night of the 22nd the pulse became feeble, slow, and intermittent, the breathing scarcely perceptible, the feet and surface cold. He rallied under the use of stimulants, and the digitalis was omitted. With the omission of the medicine the former symptoms all returned, and he was again very dirty, plastering his room with his excrement, &c.

August 3rd.—Was ordered, after a noisy restless night, 5j of the sedative mixture three times a-day. This was continued until August 10th, without any appreciable effect or improvement. The chlorodyne (Dr. Collis Browne's) was then tried, and continued in 3ss doses until August 25th, without any benefit.

On August 30th, the digitalis was again given in gtt. x. doses three times a-day with immediate results. The noise and violence disappeared, and his habits became clean. It required, however, in this case, the greatest care in its administration. Thus, on September 10th, the pulse was only 50, and intermittent every fifth beat; and the digitalis was omitted for two days, when the old symptoms again returned. Since then, up to the present date (Nov. 25th), the patient has been kept under the influence of the digitalis, having from ten to thirty drops daily, according to the state of the pulse. Under this treatment he has become quite calm and manageable; his habits are clean, and he is quiet at night, sleeping in a dormitory. He has gained rapidly in weight. Besides his ordinary diet, he eats two pounds of extra bread during the day and night. He has no stimulants.

This patient showed a greater intolerance of the digitalis than I have ever met with. On July 22nd he nearly died from the treatment. Yet the smaller doses (ten drops) exerted and still exert a specific control over the maniacal symptoms and dirty habits, the result of the general paresis. He was, without exception, the most troublesome, noisy, and dirty case of general paresis that I have had to treat. I tried the Roman bath once or twice, but it certainly increased the cerebral excitement. The mania (despite the active treatment) lasted beyond Dr. Bucknill's limit of thirty days, and it would apparently have continued much longer if this drug had not been boldly used. The packing in the wet sheet was also tried, but the circulation was so languid that the usual reaction did not set in, and its use had to be discontinued.

**CASE 6.**—*Mania from intemperance — Phthisical tendency — Delusions of greatness and wealth — Failure of a partial opiate and water treatment — Entire abatement of the excitement and delusions under the use of Digitalis.*

H. H.—, No. 650, admitted at Hayward's Heath, July 29th, 1862.

*History.*—Married; age forty-six. Of intemperate habits, little or no history could be obtained of him. Had been a butler at Brighton.

*State on admission.*—Tall, delicate man, very restless and agitated, dis-

posed to be violent; and says that he is God, and King Henry VIII., and that his children are princes, and that this house is one of his palaces. Bodily health much reduced. Tongue foul.

Was packed in a wet sheet and slept an hour, which was repeated with the same effect on the following day.

*Progress.*—The symptoms of maniacal excitement, with restless nights and destructive habits, continued throughout August. He was placed on the morphia treatment ( $\frac{1}{4}$  gr. twice a-day), with a liberal diet, steel and acid mixture, but made little or no improvement, and continued a most restless and troublesome patient, and was a source of great discomfort to the other patients in the ward.

He was disposed to assault the attendants when his slightest whim was interfered with. He wrote letters to the lord-lieutenant of the county, and to the bishop of the diocese as to his desire to be ordained: he also informed them that the queen had conferred on him the title of King Henry IX., and he signed his name as Prince Henry of Kent. He was packed occasionally in the wet sheet with temporary benefit.

September 3rd.—Ordered  $\mathfrak{ss}$  of tinct. digitalis three times a-day. On the 4th he was calmer. On the 22nd the drug produced its physiological symptoms, and under its steady use the maniacal exaltation subsided. It was continued till the end of September, when he became calm and contented, making himself extremely useful, waiting on the sick in the infirmary, but the delusions, particularly as to his intention to be ordained by the Bishop of Chichester, still existed.

Symptoms of tubercle were found in both lungs early in October, with morning cough, &c. &c. For these symptoms he was placed under treatment, taking steel, cod-liver oil, and the Roman bath, with improvement in his general health.

In this case maniacal symptoms, though directly excited by drink, owed their predisposing cause to the phthisical diathesis. It cannot be doubted that the maniacal symptoms yielded rapidly to the use of digitalis, and disappeared when the physiological action of the drug manifested itself. He was transferred improved to the Kent County Asylum, March 4th, 1863.

In addition to the above cases I have the record of others, in which, for more limited periods, the use of the digitalis has been followed by calm and improvement. Thus, in the case of R. Y—, No. 771, admitted September 30th, 1863, with general paresis and mania, and who was noisy, violent, and filthy in his habits, and very destructive, two days' treatment by digitalis in  $\mathfrak{ss}$  doses of the tincture relieved all the symptoms, which again recurred on the intermission of the medicine (the use of which brought on an unusual state of depression), and again yielded—not to recur—to the employment of one  $\mathfrak{ss}$  dose at bed-time, continued for a fortnight. So again in the case of T. T—, No. 723, admitted February 28th, 1863, passing rapidly into the stage of dementia, with general paresis, the use of the tincture of digitalis in  $\mathfrak{ss}$  doses entirely controlled the accompanying violence and mischievous habits of the patient.

Again, in the case of J. H—, No. 691, admitted October 29th, 1862, with symptoms of general paresis, with maniacal excitement, violence, and exalted delusions, with a pulse of 100, and sleepless nights, the use for a week of the tincture of digitalis in  $\mathfrak{ss}$  doses, removed all the symptoms of mania, reducing the pulse to 65, and the patient has since continued calm and manageable, the disease running its natural course.

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ART. 32.—*On Pellagra and Insanity.*

By M. BILLOD.

(*Journal de Méd. et Chir. Prat.*, Décembre, 1863.)

The Director of the Asylum of Sainte-Gemmes (Maine et Loire), Dr. Billod, who for many years has perseveringly contended that in lunatics pellagra is one of the sequelæ of mental disease, maintains this opinion with more energy than ever, and, in order to remove all doubt, has laid on the table of the Academy of Sciences, a complete scientific challenge, which, if accepted, must, in his opinion, for ever set at rest all controversy on the subject.

The Director of Sainte-Gemmes proposes to leave the settlement of the matter to the arbitration of six fully competent medical practitioners, residing in countries in which pellagra is endemic. Two of the referees should be chosen in Lombardy, two in Spain (in the provinces of Asturias and Arragon), and two in France, in the Département des Landes. M. Billod claims the right to elect three of these gentlemen, his adversaries will appoint the remainder. The commission thus named would repair next year to Sainte-Gemmes at the usual period at which the specific symptoms of pellagra make their appearance, and would remain as long as may be necessary for the thorough investigation of the disease, in recent and in old cases, and for the drawing up of a joint consultation.

M. Billod binds himself beforehand to accept the verdict, whatever it may be, of the said commission of inquiry, and publicly engages to defray all travelling and other expenses of the six referees; he will, in addition, provide funds for the foundation of a prize of the value of 200*l.*, to be awarded by the Medical Society of Hospitals, to the author of the best essay on pellagra, in case the decision of the commission should prove unfavourable to his views on any one of the controverted points, which he sets forth as follows:—

1. Is a disease, in all respects similar to pellagra, observable at the Asylum of Sainte-Gemmes?

2. In the affirmative, is this affection exclusively noticed in the lunatic inmates, or does it likewise extend to the other residents?

3. Do not the inhabitants of the village (about 1700 souls), and those of the entire district (exceeding 22,000), enjoy perfect immunity from the symptoms alluded to? Information on these various points will be easily attainable by direct observation, and by the reports of the medical practitioners of the district, whose attention has for nine years been concentrated on the subject.

4. Are any hygienic differences, beyond those resulting from their mental condition, observable between the lunatics of the asylum and the population of the village, or of the entire district?

5. *A fortiori*,—can any circumstances other than soundness or unsoundness of mind, be detected in the diet, habitation, and general hygienic conditions, to explain the presence of pellagra among the lunatics, and the immunity enjoyed by the other inmates of the asylum?

6. Is it not naturally to be inferred from the immunity of these inmates, and of the population of the adjacent village and district, that the cause which induces pellagra in the lunatics, remaining inoperative for all other persons, the only circumstance in which they differ—viz., insanity—exerts at least a predisposing influence?

7. Amongst the lunatics who have been affected with, or are actually labouring, under the symptoms of the disease under consideration, the mental derangement has in some instances been the consequence of epilepsy, and cannot therefore be referred to the previous existence of pellagra; an important remark already urged with considerable power by Dr. Pain, in a recent publication relative to his patients in Clermont (Oise).

8. The admission of the previous existence of latent or unrecognised pellagra is not more legitimate in the case of lunatics subsequently affected with the disease, than for other individuals. The necessary inference from such reasoning would be that mental alienation is always caused by pellagra.

9. From researches carefully instituted on these points, from the closest inquiries for a period of nine years, both from the relations of the lunatics and from the physicians who attended them, and minutely recorded their history, it appears palpably evident that the development of insanity preceded pellagra; in most if not in all cases. The referees will decide whether it is fair to argue in support of the contrary opinion, that the relatives are incompetent to judge of the presence of an erythema, or the physicians incapable of pronouncing on the existence of pellagra, more especially medical practitioners whose attention has for years been peculiarly directed to the observation of a disease the most characteristic features of which may at any time be observed in an asylum situated in their immediate neighbourhood. A visit to the hospitals of Angers, and an inquest in which the practitioners of the department will be happy to give every assistance, will promptly convince the referees of the almost complete immunity from pellagra of the entire country beyond the walls of the asylum, and within its precincts of all but the lunatic inmates.

10. Some years ago, in his report on facts submitted to his judgment, relative to "erythema of the extremities," which had never before attracted notice under similar circumstances, and to "the cachectic diarrhœa coincident with the last stage of dementia, general paralysis, lypemania, and idiocy," Professor Tardieu gave utterance to most sagacious remarks, which have since been fully confirmed by the acknowledged similarity of these forms of erythema and diarrhœa, with those which are pathognomonic of pellagra.

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### ART. 33.—*On the Treatment of Hysteria.*

By M. BEAU.

(*Journal of Practical Medicine and Surgery*, March, 1864.)

The remedies recommended in the treatment of hysteria are almost invariably derived from the class of anti-spasmodics. Indeed,

authors have too long been struck, in the history of this disease, with the most prominent symptoms only, and have not taken the trouble of tracing the nervous disturbances to their true cause, nor of inquiring into the manifold morbid conditions which govern their manifestation. Hence the resources of medicine have been applied only to the relief of the paroxysms, and no serious effort has been made to avert their return.

In order to establish the treatment of hysteria on rational grounds, M. Beau opines that the fact should never be lost sight of, that the patient is not only afflicted with a nervous temperament, which is a predisposition to undue reflex action, but must also have suffered previously from obstinate dyspepsia. The causes of the latter may vary; but its consequence is anæmia, which aggravates the intensity of the nervous symptoms, and adds to their obstinacy.

The mental causes which induce dyspepsia are the same as those which lead to hysteria. The uterus, on the other hand, is a centre from which impressions radiate, and any disturbance of its function may give rise to dyspepsia, and thus indirectly produce hysteria.

In addition to mental, cerebral, or uterine causes, M. Beau believes in the influence of gastric disturbance, whether it be the result of the presence of worms, indigestion, or of a saburral condition of the *primæ viæ*.

The mere fact of the presence of dyspepsia indicates a watery condition of the blood, and anæmia, of all circumstances the most favourable to the development of nervous symptoms. Hysteria, therefore, is seldom observed in vigorous subjects, *sanguis moderator nervorum*. If a strong woman, by exception, becomes affected with the disease, it is only after having first suffered from dyspepsia and consequent anæmia. When the latter supervenes, gastric dyspnœa makes its appearance, rises to the throat, and induces reflex action, which is promptly followed by nervous paroxysms.

These preliminary remarks clearly point out the most appropriate course of treatment in hysteria. It is obvious that the causes must be removed, and in the first place discovered.

If it is impracticable to remove at once the causes of mental distress which may have induced the malady, it will be proper to endeavour to divert the patient's thoughts into new channels, by amusement, change of scene, and regular and persevering occupation. Some women are liable to nervous paroxysms only when time lies idly on their hands. The case of a lady is referred to who cured herself by severe bodily exertion, and by direct personal superintendence of the management of her house, which her position and means rendered it unnecessary for her to attend to. Another patient has been greatly benefited by gymnastic exercise. He was a thoroughly dyspeptic subject, and regular muscular exertion has improved his digestion, and the tone of his system. A month ago he expressed his regret that he had not sufficient firmness to commit suicide, but is now full of hope, and attached to life. In this instance, hydropathy entirely failed in effecting a cure, and yet it is a method of treatment which may often be prescribed with fair prospects of success.

With regard to the womb, it is always necessary to ascertain its condition, and to relieve any local symptom which may be present, as in the two cases above referred to.

The state of the stomach likewise requires attention. Loss of appetite, a foul tongue, &c., will indicate the propriety of an emetic, and if worms be present, anthelmintics should be resorted to.

The nervous symptoms and paroxysms must not be neglected, and for these valerian baths are, in M. Beau's opinion, the most efficient remedies.

The diet is of peculiar importance, and should not be systematically laid down, but be appropriated to the taste and digestive aptitude of each patient. The object is to administer food which may be properly assimilated, and every means of attaining this object is justifiable. No practitioner entertains in this respect more conciliating and more liberal views than M. Beau.

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#### ART. 34.—*Epidemic Catalepsy.*

By Dr. VOGT.

(*Würzburger Med. Zeitschr.*, Bd. iv. Heft 3; and *British Medical Journal*, January 30, 1864.)

According to Dr. Vogt, catalepsy is endemic at Billingshausen, a village about four miles from Würzburg. The place lies in the neck of land formed by the northerly bending of the Main, between Karlstadt and Marktsheidenfeld. It contains 103 families, with 356 individuals, who are in good circumstances. "There is no poverty—the poorest man in the place is the minister." The inhabitants are Protestants, although living among Catholic neighbours. Inter-marriages are very frequent; and there are, with few exceptions, but five family names in the village. Gout and cretinism is rare; but Dr. Vogt found two men suffering severely from shaking palsy. In spite of their favourable social conditions, the people are small, feeble, and plain-featured; in mental powers they are on a par with their neighbours. The system of inter-marriages, Dr. Vogt remarks, may be a cause of the disease, but nothing is known as to its true mode of origin; from the symptoms, however, he is disposed to attribute it to a periodic interruption of innervation in the spinal system.

The disorder is characterized by the following phenomena: Without any premonitory symptoms, the patient suddenly falls down in the place where he happens to be. The aspect is death-like; the face is pale; the eyes are fixedly directed to one point, with their axes converging; the lips are closed and protruded; the fingers are semiflexed. A slight trembling movement may, by careful examination, be detected in the pupils and hands. Attempts to speak result only in the utterance of unintelligible short broken sounds. The muscular system alone is affected; the senses and intellect remain entire. An attack of this kind lasts from one to five minutes; it appears to commence with formication in the arms



and legs, and the patients feel the rigid contraction of the muscles. There is no pain in the back nor in the limbs. The paroxysm seems to be especially favoured by exposure to cold; it attacks people who have removed their garments when at work in the fields, or in church, but it also occurs in persons engaged in their domestic occupations, or in towns.

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### ART. 35.—*On the Curability of Hydrophobia.*

By M. DECROIX.

(*Commission sur la Rage*; and *Dublin Medical Press*, April 6, 1864.)

During the year 1850 one of the veterinary surgeons of the French army, M. Decroix, while he was in garrison at Algiers, made some experiments, in order to prove—first, that hydrophobia exists in the above town, in contradiction with the general opinion, and secondly that this terrific disease is susceptible of being cured.

In a first experiment he inoculated a dog with the foam of a mad one; the former, after having shown during seven days very visible symptoms of hydrophobia, got spontaneously cured on the twenty-fifth day after the inoculation.

In a second experiment, a dog was inoculated with the saliva of a man labouring under hydrophobia. The inoculation perfectly succeeded, which proves that hydrophobia can be transmitted from man to dog. The subject of this experiment became mad at the end of sixteen days, showed signs of madness for about a week, and became entirely cured about one month after the inoculation.

M. Decroix, seeing this favourable result, doubted for a time the accuracy of the diagnosis. But his scruples were dissipated when he learnt that, according to the testimony of the Professors Lecoq, Rey, Tisserand, and Tabourin, several cases of cure of hydrophobia by the sole efforts of Nature had been observed at the Veterinary School of Lyons.

The curability of hydrophobia is therefore, in the belief of M. Decroix, quite a recognised fact. His experiments prove, he says, that hydrophobia can be cured spontaneously. He does not much believe in specifics; but for all that he thinks that practitioners should not cross their arms and remain inactive in such a disease.

First of all, you must reassure the people bitten by suspected dogs, and use the most energetic and diversified means to keep away their thoughts. M. Decroix is convinced by himself of the influence that these preoccupations can exercise upon even the most unimpressionable natures.

This veterinary surgeon narrates that on the 25th November last, he himself swallowed, having nothing in his stomach, a bit of raw meat, coming from a dog dead only a few hours previously from hydrophobia; and that on the 29th of the same month he ate two pieces of roast meat also coming from a mad dog. M. Decroix, convinced up to that time that the flesh of mad animals could be eaten with impunity, took no notice of his experiments, when a few days

afterwards he read, in an article of Professor Lafosse, of Toulouse, that several authors had pointed out cases of transmission of hydrophobia by using the meat of mad dogs or herbivora. M. Decroix felt then his security lessening, and nearly immediately was attacked with a peculiar sensation in his throat and a notable alteration in his voice. These phenomena disappeared under the influence of diversion or arduous occupations; but they reappeared sometimes in moments of inaction, or when M. Decroix thought of hydrophobia, or of the experiments of the 25th and 29th November. M. Decroix thinks that this example can be added to those already quoted to show the influence of imagination and of preoccupation in the development of hydrophobia in man.

To leave the patients in the greatest calm, avoid contradicting them, satisfy their wishes, procure diversions for them, and keep up their spirits, shun the use of means which experience has shown to be useless or injurious—such are, according to M. Decroix, the principal things to be done in the treatment of hydrophobia.

ART. 36.—*On a Peculiar Form of Neuralgia not yet described, excited by a Desire to Pass Water and by Micturition.*

By Dr. PUTÉGNAT, of Lunéville.

(*Gaz. Hebd. de Méd. et Chir.*, Avril 15, 1864.)

The following two cases, out of six published by the author, will give an idea of this peculiar neuralgia, which consists, on the one hand, in a special sensation in the bladder, and on the other, in symptoms of a neurosis of the ulnar nerve.

CASE 1.—M. X—, aged fifty, with chestnut hair, of a nervous and sanguine temperament, very abstemious, in affluent circumstances, leading a very active life, occupying very healthy apartments, free from all diathesis, except a slight rheumatic affection, liable to coryza in cold, damp weather, has never had any other nervous complaint beyond headache and occasional gastralgia, after eating dressed salads or raw fruit.

From time to time, at varying intervals of weeks, months, and even years, without any apparent physical or moral cause, in all electric, barometric, and even thermometric conditions of the atmosphere, as soon as his bladder was full, and he had a strong desire to pass water, he feels along the urinary passages, especially in the perinæum, a peculiar sensation of numbness, not very painful, but acute, burning, lancinating, and unpleasant from the accompanying sense of prostration. This strange sensation next affects the shoulders, comes down both arms, along the course of the ulnar nerve only, and gives rise in the fore-arm, the little and the ring fingers, to the same sensation as when the ulnar nerve is strongly compressed at the elbow. The pain is more acute on the left than on the right side, lasts about twenty or thirty seconds, and after diminishing gradually, disappears without leaving any trace behind it.

CASE 2.—M. X—, of Lunéville; living in healthy rooms; very active; easily moved and excited; subject to headaches and to rheumatic pains; free from any diathesis; very abstemious; complains, for several successive days, but at irregular intervals, and without any known cause, of

a strange sensation along the outer border of the left fore-arm, on the inner side of the thumb and the outer surface of the index finger especially. This sensation he compares to the one produced in the two last fingers of the hand by compression of the ulnar nerve at the elbow.

The painful sensation only comes on whenever he has a strong desire to pass water, persists during micturition, and ceases completely immediately afterward.

On analysing the six cases of the author, we find four of them to have occurred in females. The mean age of the patients is forty-six: the oldest being fifty-two, and the youngest thirty-six years old. They are all in easy circumstances; five occupy healthy apartments, the sixth alone, damp rooms on a ground-floor. Three patients have had gastralgia; the fourth, sciatica, and great troubles have shaken his nervous system; the fifth is subject to violent headaches; and the sixth, a female, seems to have epileptiform seizures, and has a double neuralgia. From the above, then, it may be concluded that neuralgia, and great nervous excitability, are predisposing causes of this strange neuralgic affection.

In one of the four female patients the catamenia had ceased; in three they had not, and in two of these the neuralgia showed itself before and during the menstrual periods.

Uterine congestion seems then to be a predisposing cause also.

Four of the six patients had had rheumatic pains; but the other two, having never suffered from such pains, cannot be considered as the exciting cause of the neuralgic affection.

The desire to pass water, and especially micturition, bring on the sensation, which only appears at those stated times, and it reaches its maximum intensity at the beginning of micturition. It has all the characters of neuralgia, and can even aggravate, as in one case, an already pre-existing neuralgia—that of the median nerve.

As to the precise seat of the sensations, we find them affecting the four extremities of one patient, but the upper limbs only of the remaining five. In three cases they simulate to perfection neuralgia of the ulnar; and in two they are felt in the tips of all the fingers. In one case they coincide with and intensify pains in the course of the median; and lastly, as in the first case we have given above, they are felt in the distribution of the left radial nerve.

The first patient complains of pain in both shoulders, especially the left; the fourth, of pain in both arms and hands, but chiefly in both breasts, and in the left breast more than the right; the sixth, again, of pain in both fore-arms and hands, but more marked on the *left* side. Hence, the left side of the body would seem to be either the only one affected, or the one most affected.

The patients always distinguished clearly the special painful sensations felt in the urinary passages, from the normal sensations due to a distension of the bladder and the subsequent desire to pass water.

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ART. 37.—*On Epileptiform Neuralgia.*

By M. TROUSSEAU.

*(Journal de Méd. et Chir. Prat., Janvier, 1864.)*

Under this name, M. Trousseau lately described in a clinical lecture a condition which he, in common with others, had long confounded with ordinary facial neuralgia. It differs from the latter in the suddenness of its appearance, in the intensity of the suffering, in the cessation of all pain after a short and constant period of duration, and in the incurability of the attacks, which come on at intervals varying from ten seconds to two hours, or more. In one of his wards in the Hôtel-Dieu there was a man who had thirty of these paroxysms in an hour. He could neither eat, drink, nor sleep; and this state had continued during two months. This special form of neuralgia, which attacks the trifacial nerve alone, never yields completely or lastingly to treatment. M. Trousseau does not in such cases prohibit division of the painful nerve; but does not recognise it as producing a durable effect. The application of morphia to a blistered surface, hypodermic injections, &c., are all useless. The only remedy which can be truly said to act as a palliative is opium in very large doses. In the case of an old lady at Antwerp, who had epileptiform neuralgia, the pain was removed by the use of enormous quantities of opiate medicines. The attacks in her case lasted from a few seconds to three minutes. They commenced sometimes in the infraorbital nerve, sometimes in the mental, sometimes in the supraorbital nerve. The disease rapidly spread to the three branches of the nerve; and when the paroxysm was at its height, the muscles of the face were thrown into convulsive contortions. The patient had often twenty attacks in an hour. Sometimes the disease disappeared during eight, fifteen, or twenty days, or more, to return with fresh severity. In this case M. Trousseau first gave sulphate of morphia in doses of from fifteen to twenty *centigrammes* daily; he then gradually increased the daily quantity to four *grammes* (one drachm). The relief was most remarkable. On account of the expense of the morphia, M. Trousseau procured some opium, of which the patient took from ten to twenty *grammes* (two drachms and a half to five drachms) daily, always with good effect on the neuralgia, and without disturbance of the digestive functions. The tolerance of opium in such cases is remarkable; but the medicine should be commenced in ordinary doses and gradually increased.

ART. 38.—*On Counter-Irritation with Tincture of Iodine in Neuralgia.*

By M. BOUCHUT.

*(Medical Circular, August 12, 1863.)*

In a clinical conference at the Children's Hospital in Paris, M. Bouchut relates several cases which illustrate the efficacy of this mode of counter-irritation in cases of neuralgia.

The first case related was that of a lady, aged fifty, who for six months had been prevented by intercostal neuralgia from wearing stays. The painful region was painted over every day with tincture of iodine during a week, and at the expiration of that period a complete cure was effected.

Another, and very corpulent lady, had for three years suffered from a stitch in the eighth intercostal space, in front of the short ribs. The same treatment was instituted, with perfect success.

A dyspeptic and hypochondriac subject affected with præcordial neuralgia, considered himself threatened with disease of the heart. Daily applications of tincture of iodine were prescribed, and the pain subsided; a relapse took place, and again the remedy, perseveringly resorted to with sufficient energy to cause desquamation, removed the neuralgia, which then disappeared altogether.

In some cases of obstinate intercostal neuralgia the patients imagine the symptom to be the indication of pulmonary tuberculosis. A lady, subject to bronchitis, had for twelve months suffered from a neuralgic pain of this description, and conceived herself to be consumptive; she resorted, by advice, to the Eaux Bonnes, but returned to Paris without having experienced any improvement. M. Bouchut applied the tincture of iodine, relieved the pain, and the much-dreaded thoracic disease was cured at the same time.

Neuralgia of the breast is to many women a cause of very great uneasiness, especially when the organ contains the small indurated lobules which M. Velpeau designates under the denominations of adenoma, or irritable tumour of the mamma. In these cases the patients are haunted by the fear of cancer, and M. Bouchut has had several opportunities of testing the efficacy of the tincture of iodine; applications daily repeated for eight or ten days have often succeeded in calming the pain, and in reassuring the patients.

In another case of a singular nature the neuralgia was accompanied by delusions of the sense of hearing, and the pain was so intense that the sufferer, tormented by hostile imaginary voices, and much alarmed by her symptoms, seemed bent on self-destruction. M. Bouchut removed the pain in a few days with the tincture of iodine, and this lady has since recovered from her melancholy mental condition.

M. Bouchut adduced several cases from which it appears that all varieties of neuralgia may be benefited by the treatment he recommends.

A little girl was afflicted with supra-orbital neuralgia; for three days in succession tincture of iodine was applied over the brow to a surface not exceeding the size of a sixpenny-piece, and a cure was effected.

M. Bouchut further related two instances of hemicrania, with photophobia and vomiting, in which the symptoms yielded to the same remedy. He also brought forward a case of sciatica observed in a naval officer; the pain was chiefly apparent at the head of the fibula and near the tendo-Achillis. Both regions were touched with the tincture, and the sciatica disappeared.

Blistering might possibly have proved equally beneficial; but the

application of blisters is not always possible, and tincture of iodine is a valuable and convenient substitute.

Thus, when M. Bouchut was attached as physician to the Hôpital Sainte-Eugénie, he was consulted by a lady, residing at Charenton, for neuralgia in the occipital region. The patient was naturally desirous of preserving her hair, and instead of a blister, tincture of iodine was prescribed. The desired effect was produced after desquamation of the cuticle, and the hair was not injured.

As an instance of numerous and successive attacks of neuralgic pains, we may adduce the instance of a lady, who during her monthly period, wearing a crinoline and insufficient under-clothing, caught cold; the menses were checked, and retro-uterine hæmatocele followed. She was treated in an appropriate manner, and recovered her health; but pains supervened in the pelvis, between the shoulders, and in the intercostal spaces. The inter-scapular neuralgia had lasted eight months, when by M. Bouchut's advice, tincture of iodine was applied every day for a week; the treatment was very painful, but its results were perfectly satisfactory. Iliac neuralgia subsequently occurred; the same remedy was resorted to, but not with sufficient perseverance to secure permanent relief. Indeed, the method cannot be successful unless a predetermined action is induced, which hitherto can only be estimated by desquamation of the cuticle.

This is not a new mode of treatment. In pulmonary consumption, and in chronic pleurisy, the same procedure has been highly recommended for the relief of the pains which frequently accompany these affections. The method was introduced into practice by M. Blache, has since been very generally adopted, and is now acknowledged to be highly serviceable. This eminent practitioner, and also M. Van Holsbeck, in Belgium, and M. Magne, in Paris, have substituted, with much benefit, tincture of iodine for the blisters formerly applied around the orbit, for the purpose of removing the photophobia which accompanies scrofulous ophthalmia, and interferes with the needful inspection of the eyeball. This object is most satisfactorily attained by painting over the lids, forehead, and temples every second day with the tincture, and the tendency of blistered surfaces in hospital to become the seat of diphtheria is thus ingeniously neutralized.

The efficacy of tincture of iodine for the cure of arthritis and of chronic articular rheumatism is well known to our readers. "These applications made morning and evening, once a day, or once every other day," says Boinet, "operate favourably on several of the elements of disease of the joints, *promptly allay pain*, and hasten the absorption of effused liquids." The same author remarks that by this method alone he effected a cure in two cases of chronic sciatica which had lasted the first four, and the second six months.

We may, however, be permitted to observe that this local medication has been more or less suggested by the idea of the specific virtues of iodine for the cure of scrofula, tuberculosis, and rheumatism; indeed, in most instances the general treatment simultaneously prescribed bears witness to this pre-occupation, and on this point

the originality of M. Bouchut's views becomes more apparent. In prescribing as a general rule tincture of iodine locally, this practitioner has not in view the removal of a diathesis; he takes into consideration the pain only, and represents tincture of iodine solely as a means of allaying the suffering and as a mere counter-irritant.

Indeed, counter-irritation is the method of treatment which for centuries has been chiefly resorted to in neuralgia. Thus, congestive irritants, such as mustard; vesicants (cantharides and ammonia); ulcerative irritants, such as clematis, certain varieties of ranunculus, euphorbia, lathyrus, nettles, croton-oil, tartar-emetic ointment, &c.; other irritants, viz., delphinium, colchicine, veratrum, which without causing any redness of the skin induce a thrilling sensation, which Mr. Turnbull not inaptly compares to the action of electricity, electricity itself, especially inductive; acupuncture, escharotics, and the essential cautery, are all obviously counter-irritants, and each has been, and is still, found occasionally efficacious.

ART. 39.—*Clinical Data respecting Amaurosis, more especially respecting that Form of it supposed to be induced by Tobacco.*

By Mr. JONATHAN HUTCHINSON.

(*Lancet*, November 7, 1863.)

Mr. Hutchinson states that his attention was drawn to the question of the possible influence of smoking in causing amaurosis by some papers which had recently appeared in the medical journals. He has collected together all the cases of true cerebral amaurosis of which he has taken notes during the past four years; they do not comprise all that had come under his care, but most of the more interesting ones. The cases quoted are 65 in number, and are allotted to three groups:—First, cases in which both eyes were affected and the patients were adults (47); secondly, cases in which both eyes were affected and the patients were children (11); and, thirdly, cases of amaurosis of only one eye (7). The subjoined table will show the relative proportion of the two sexes in each group:—

	Males.	Females.
Series I.—Symmetrical, and in Adults:		
Cerebral amaurosis, uncomplicated (idiopathic)	37	3
Ditto, probably complicated or secondary	3	4
Series II.—Symmetrical, and in children:		
Cerebral amaurosis, uncomplicated (idiopathic)	3	7
Ditto, probably complicated or secondary	0	1
Series III.—Unsymmetrical (all ages)	3	4

In this table all the cases in which there was good reason to suspect that the amaurosis was secondary to other disease were considered as complicated; in the others (idiopathic) he has been unable, on care-

ful inquiry, to discover any satisfactory explanation of the disease. It will be noted that a most remarkable difference in the relative proportion of the two sexes existed in the idiopathic class of the first series, and that this discrepancy is not found in the other groups. Mr. Hutchinson then proceeds to inquire as to how this great disproportion (37 men to 3 women) can be explained. The possible influence—1st, of different occupations; 2nd, of intemperance; 3rd, of sexual irregularities; 4th, of venereal diseases; 5th, of injuries; and lastly, of tobacco, are severally examined. That occupation had not much to do with it seemed clear from the fact that the patients had followed most various callings; and as to syphilis and intemperance, to neither of these was the male sex exposed in sufficiently disproportionate degree to account for the very different numbers. In only 4 of the whole number of cases was there any history of injury to the head; and in 2 only of these could it be reasonably inferred that the injury had been the exciting cause of the disease. There remained then the possible influence of tobacco-smoking and of sexual excesses. The author stated strongly his conviction that the real explanation of the majority of cases of this form of amaurosis would be found in one or other of these two. Whether tobacco had any share, or whether all should be attributed to the former, he could not say. He wished to abstain for the present from any positive opinion, and simply begged to call attention to the clinical facts. It might possibly prove that, after all, this disproportion in the sexes was a mere coincidence, and that a larger collection of cases would show it to be such.

Amongst the conclusions obtained by analysis of the series of cases, the following are the more important:—In 23 of the 37 cases it was recorded that the patients had smoked; whilst in 2 it was expressly stated that they had never done so; and in 12 there was no information. In 10 the patients had been intemperate. In only 2 could it be ascertained that the patients had had constitutional syphilis. In 4 instances the sufferers attributed their disease to anxiety. The disease had progressed to absolute blindness in 15 instances; in 5 it appeared to have been arrested; and in most of the others it was either progressive at the last date of notes, or the patient had ceased to attend.

With regard to the probability of sexual excesses having anything to do with the causation of the disease in question, the author states that in not a few he has obtained the history of failure of sexual power. He has also found that varicocele was a frequent concomitant of this form of amaurosis. Still, on the other hand, in many instances the patients were healthy, robust men, who ailed nothing whatever excepting the loss of sight. In no single instance in the series was there any strong reason for attributing the disease to masturbation. Even if it were proved that varicocele, wasted testes, and loss of generative function were usual concomitants of this form of amaurosis in the male, still the tobacco hypothesis would not be wholly set aside, since the two classes of symptoms might both be due to one common cause. It was remarkable that in almost all the few cases in which the disease occurred idiopathically in



females, there was the history of very decided disturbance of menstruation.

Although Mr. Hutchinson feels that there are great difficulties in the way of belief in the tobacco hypothesis—such, for instance, that many of those affected had smoked only quite moderately; that many had smoked for a long series of years before the amaurosis supervened; that thousands and thousands smoked to great excess without ever suffering from amaurosis; that it was not easy to understand how the tobacco-poison could act on one single nervous ganglion alone, the other parts of the nervous system escaping—still, he thinks there is enough of suspicion in the clinical facts to make it the duty of ophthalmic surgeons to insist on the disuse of tobacco in all cases in which the premonitory symptoms of this disease were presented. The subject was one well worthy of prolonged investigation, and no doubt it would soon be set at rest one way or the other.

In conclusion Mr. Hutchinson notes the following desiderata:—

1. A much more extended series of cases.
2. More detailed information as to the use of tobacco by those affected by this form of amaurosis.
3. Information as to whether there may not be a considerable proportion of men affected by it who have never used tobacco.
4. Information as to the coexistence or otherwise of varicocelæ with this form of amaurosis.
5. Information as to whether it ever occurs in women who have smoked. In some countries where smoking is more common amongst women than it is here, valuable information on this head might be obtained.
6. Better knowledge as to whether the course of the disease can in any considerable number of cases be suspended,—1st, by making the patient give up smoking; or, 2nd, by regulation of sexual habits.

#### ART. 40.—*A Case of Tetanus treated by Nicotine.*

By Dr. OGLE, Assistant-Physician to St. George's Hospital, &c.

(*Medical Times and Gazette*, March 12, 1864.)

In addition to his own case, Dr. Ogle gives a case of tetanus, in which the same treatment was employed by Mr. Savory; and we make here the same addition. Dr. Ogle, it must be observed, acted in conjunction with his colleague, Mr. Holmes:—

1. *Dr. Ogle's Case.*—The patient, Mary G., a thin, delicate-looking girl, aged fourteen years, was admitted into St. George's Hospital, on August 29th, 1863, having a long lacerated wound of the soft parts of both sides of the left leg, which had been caught in the spokes of the wheel of a cart. The edges of the wound were much bruised, and a few days after her admission began to slough. Subsequently, the wound became cleaner, and her general health improved under the use of tonics and occasional sedatives, until the evening of September 6, when she complained of what was called "slight

sure throat." Croton-oil and colocynth were given. On the following morning (September 7) there was trismus, the mouth was firmly closed, and the risus sardonius existed. The lips were dry, the pulse small, weak, and 156 per minute. The pills had acted once. At noon I was desired by Mr. Holmes to see her with him, and found her lying flat in bed, with the head raised, the eyes half closed, the lips tightly drawn across the gums, the upper teeth and gums being freely exposed. She was utterly unable to open the mouth, and the muscles of the face were perfectly rigid, especially the masseter and buccinator on either side, and the muscles of the shoulders and back of the neck. The skin was cool; the pulse feeble, about 135 per minute. The intellect was quite clear. Both the pupils were rather large, but equal, and acting to light. Ordered, a repetition of croton-oil and the compound colocynth pill, and a lotion to the wound, consisting of half an ounce of extract of belladonna to a pint of water. At 5 P.M. the bowels had acted very freely. At this stage I talked with Mr. Holmes on the advisability of amputating the limb, seeing that, owing to the nature and extent of the local injury, it would have been quite impossible to have divided separately such nervous trunks as supplied the parts implicated. Mr. Holmes consulted with two of his Surgical colleagues, Mr. Pollock and Mr. Lee, and, in consequence, the idea of amputation was rejected, as Mr. Holmes said, on the following grounds:—"1. We thought that it was too late, as the irritation, or the diseased condition, or whatever you like to call it, would be propagated by this time up the nerves, far beyond the point of section in amputation. 2. We did not think it impossible that the patient might survive without amputation. 3. She seemed so weak that amputation would be a serious danger to her, as would (I think) the necessary chloroformisation. No success has, as yet, attended amputation of the thigh, I believe."

September 8th, 9 A.M.—There had been very little sleep, but the patient had swallowed between one and two pints of beef-tea. There had been no spasmodic action of the muscles of the back or belly (opis- or emprostotonos). In all important points the symptoms were the same as on the evening before. Pounded ice was ordered to be applied along the spine, enclosed in a piece of intestine. 11.30 A.M.—The risus sardonius had increased, the cheeks were flushed, but the rest of the face was pale. At her own request she was raised in bed, but the attempt to swallow a tea-spoonful of porter, which she wished for, brought on spasm of the muscles of the neck and face, and she swallowed it with great difficulty; a few minutes afterwards she swallowed it with great ease. The respiration was quiet, and 36 per minute; the pulse 140. The teeth could be separated a little. As much strong beef-tea and wine as possible were ordered to be given; and it was agreed to try half-drachm doses of spirits of turpentine with the acacia mixture and water, every four hours. One dose only could be given, owing to the amount of distress which it caused. At 3 P.M. it was agreed by Mr. Holmes and myself to try nicotine; and accordingly, after procuring a genuine specimen from Messrs. Bullock and Reynolds, we proceeded, at 9.15 P.M., to give four drops of a solution containing half a grain, in ten minims of water, in a little brandy-and-water. At this time the forehead was much wrinkled; the abdominal muscles, as well as those of the neck and shoulders, were very tense. There was no hiccup, but great difficulty in swallowing. The intelligence was unimpaired; the pupils dilated as before, but acting readily to light. Pulse 140, and the skin very cold. The urine was passed along with the feces. At 11 P.M. she stated that she felt altogether easier, and the general aspect was certainly improved. The pulse was 144, and the skin perfectly warm. The heart's action was greater than it had been. There were no spasmodic

seizures, but the muscles of the abdomen were still very rigid. There was no increased perspiration. It was determined to administer an enema containing eight drops of the above-mentioned solution of nicotine, along with beef-tea and a little brandy; and it was ordered that a similar injection should be exhibited at two o'clock in the course of the night. The first injection was retained for an hour without producing any particular result, as was also an injection containing egg and brandy and beef-tea. At 5.30 A.M. on the following morning the nicotine enema was repeated, but rejected almost entire.

9th, 9 A.M.—There had been no sleep, and slight "wandering" had existed in the night. The patient complained greatly of the throat, and the tongue was very sore. The neck was very rigid, and the muscles of the lips stretched as before. Occasionally, general twitchings of the entire body existed, and especially starting of the injured leg. The patient raised the arms readily, and held on by the bed-rope as usual. No perspiration had existed, but the skin was warm; pulse 124. I gave the patient eight drops of the nicotine solution with brandy-and-water, and desired it to be repeated at 12 A.M. The first of these doses was retained in the stomach; the second could not be swallowed, owing to spasm of the throat, and, in its place, I ordered twelve drops of the solution to be administered with beef-tea and egg as an enema. About this time (12.30 A.M.) attacks of opisthotonos came on (from four to eight in the hour), during which she had the sensation of falling down. These attacks were not very severe, though sufficiently marked, but became considerably intensified when attempts were made to give her the medicine. Much spasm also about the throat and "frothing" at the mouth was occasioned. Very little of the medicine was swallowed, but she could open the mouth about a quarter of an inch. A nutritive injection was retained. The pulse was regular, and 136 per minute. At 12.55 P.M., twelve drops of the nicotine solution were administered in a small enema. No spasm arose during its exhibition.

Subsequently, Mr. Holmes and myself determined to try the use of the nicotine by subcutaneous injection; and accordingly, at 2.20 P.M., five minims of it, along with five of water, were injected under the skin of the left arm, which caused a slight blush of redness over the part where the injection was made. At 2.30 an attempt to swallow some porter created excessive spasm. At 3.15 the redness occasioned by the injection had nearly disappeared. At 3.30 attempts to swallow produced violent spasm of the muscles of the throat, lasting about five minutes. At 4 P.M. the arrival of the patient's mother caused much agitation and general spasm. At 4.30, Mr. Holmes injected ten minims (equal to half a grain of nicotine) into the tissues at the back of the neck. At 5.40, the same injection (ten drops) was repeated in the left arm, and was followed by some spasm. Subsequently, an attempt was made to pass a flexible gum catheter through one of the nostrils, and down into the œsophagus, so as to give a nutritive injection, but most violent and long-continued spasms, with great lividity of face, and apparent suffocation, were, in consequence, produced, and the fluid was returned through the mouth. At 5.55, the abdomen was less hard and tense. At 6.30, pain was complained of at the præcordial region, and the administration of a beef-tea injection induced a most severe general spasm, the injection being at once returned. At 7.15, a quantity of the nicotine solution, equal to half a grain, was again injected under the skin. At 8.15, it was reported that since the last injection there had only been slight twitchings of the facial muscles, and the teeth could be separated a little more. Pulse 140 per minute. A few drops of water were swallowed with less spasm. At 8.40 the subcutaneous injection was repeated. At 10 P.M. the patient was reported to have been more restless. The pulse

was 154 per minute. The skin somewhat perspiring. 11 P.M.—The restlessness continued. The abdomen was much softer, the muscles being less tense and rigid, but she seemed weaker. Pain at the throat complained of. 11.15.—Twenty drops of the nicotine solution (equal to one grain) were injected into the subcutaneous tissues of the right arm. During the operation spasm came on, and gradually increased in intensity, and so affected the respiratory muscles that the face became livid, and breathing was altogether arrested; but after cold water had been dashed on the face, and vapour of ammonia applied to the nostrils, she gradually came round, the pulse being 164 per minute. 11.30.—The breathing was long drawn, and of a sighing character. Severe general spasm returned, lasting about four minutes. By slight pressure upon the lower jaw the mouth could be opened to the extent of half an inch. At 11.44, the breathing was sighing and irregular as to rhythm. Pulse 144, regular.

10th, 1 A.M.—Breathing the same. Pulse 150 per minute. There was a little moisture on the palms of the hands. The abdominal muscles were quite lax, but the general spasms were so continuous, though not violent, that it was thought advisable to repeat the injections of nicotine. The pupils were almost quite inactive under the influence of light. The breathing continued to have an irregular character until about 3.30 A.M., when it became very much impeded, and the spasms continued throughout, though slight as to intensity. She died at 4.40 A.M.

Post-mortem examination was not permitted.

2. *Mr. Savory's Case.*—Sarah Beckett, aged eight years, a delicate girl, was admitted into Mary Ward, on October 22nd, 1862, by Mr. Wood, who first saw her in the surgery. At that time she lay quietly in her mother's arms. The back was slightly arched; the lower jaw fixed; pupils dilated; no convulsive movements.

The mother stated that the child was in perfect health on the 19th, but that on the 20th she had a convulsion. She knew no cause for the child's illness, but stated that, a month ago, she was struck on the head with a "brickbat." A small scar, about half an inch long, could be seen where she was struck, and she complained of much pain when it was pressed. Ordered—enema haust. sennæ comp. To be put into a warm bath.

23rd.—Remained much the same as yesterday. To have wine  $\bar{x}vj$ .

24th, 1 P.M.—The child was seen by Mr. Savory, who divided the cicatrix on the scalp by a small crucial incision. No pus escaped. There was no apparent change in the child. To have morphine acetat., gr.  $\frac{1}{4}$ ; æther. chlor.,  $\pi vj$ ; mist. camph.,  $\zeta ij$ , 6tâ quaque horâ. 5 P.M.—The same. No action of the bowels had occurred. Haust. morphine, 4tâ quaque horâ; hydrarg. chlorid., gr.  $ijj$ , statim.

25th.—The child appeared neither better nor worse. The corners of the mouth were visibly depressed. Bowels freely moved.

26th.—The child lay quiet. Drank large quantities of milk, and also wine and broth freely. The back remained arched, and the abdominal muscles were rigid. To take morphine acetat., gr.  $\frac{1}{4}$ , in the same mixture every six hours. Strong beef-tea, Oij.

29th.—Up to this time the morphia had produced no effect on the muscles, although the child had been for some time completely under its influence. The back was arched, and the corners of the mouth very much depressed. The fore-arms were somewhat rigidly flexed on the arms, and the fingers bent into the palms. The morphia to be discontinued. Nicotine, gr.  $ijj$ ; alcohol,  $\zeta i$ ;  $\pi v$ . to be injected subcutaneously every six hours.

This plan of treatment was continued until November 2nd. The child complained but little of the injection, which did not excite spasm. After the first dose or two some change for the better was apparent. The pulse

(120) was not perceptibly affected, but the stiffness seemed less, and the respiration deeper. But in the course of thirty hours or so, this apparent amendment passed away, and then any attempt at examination or disturbance produced spasms, which gradually increased in severity and frequency.

The pupils were often examined, but no decided effect on them was produced by the nicotine, yet its general influence on the condition of the child was marked. She lay passive, drowsy, almost insensible, when fully under the effects of it.

Brandy was freely given during this time, and when the nicotine was stopped, the general effects of it passed off.

On the 8th, the child gradually sank and died. On post-mortem examination, the dura mater was found closely adherent to the skull-cap. There was some fluid in the posterior fossa of the skull, but Mr. Savory thought, not more than usual. The structure of the brain was found to be firm and healthy throughout. Nothing wrong was discovered in the spinal cord or canal. The other organs were healthy.

ART. 41.—*A Case of Traumatic Tetanus, in which Aconite and Nicotine were used.*

By Mr. CARN, Surgeon to the Hereford Infirmary.

(*Medical Times and Gazette*, April 23, 1864.)

CASE.—Thomas L., aged thirty-seven, a gentleman's servant, on the 20th of February last met with an accident from a thrashing-machine which deprived him of the index and portions of the middle and ring fingers of the left hand, the laceration extending about an inch into the dorsum and palm. The wound had been dressed by a surgeon, and he was admitted into the infirmary on February 22nd, when the sutures were removed and replaced by adhesive plaster. He was in his usual health, and the hand looked well.

On March 1st, the tenth day after the injury, he complained of stiffness between the shoulders, and on the third took to his bed. He was then flushed and perspiring, and troubled with dyspnoea. A dose of calomel and colocynth was administered, and a free evacuation of the bowels followed. On the evening of the next day (4th) the stiffness had extended to the jaw, and he had had some muscular twitchings. Two grains of calomel and a quarter of a grain of opium were given every four hours during the night.

5th.—This morning his symptoms were much more marked, the teeth were clenched, the corners of the mouth retracted, giving to the countenance a peculiar smile; the cervical muscles rigid and prominent; lumbar and abdominal muscles hard. He had pain at the pit of the stomach extending to the back, and frequent but not severe opisthotonic spasm; deglutition not seriously impaired; the skin was bathed in perspiration; pupils contracted; pulse 120; respiration 34 per minute; mind calm, and free from extreme anxiety. Wine and beef-tea *ad libitum* were ordered, and half a grain of extract of cannabis indica given every three hours, the dose being increased to a grain hourly, and finally to two grains.

6th.—Has had a bad night; the spasms continue, especially on the approach of sleep. Ordered eight minims of Flening's tincture of aconite immediately, to be followed by four minims every hour. 8 P.M.—The spasm and rigidity have somewhat diminished, the former affecting

chiefly the muscles of the hip and thigh. He lies with the lower extremities semi-flexed; pulse 100—96; pupils natural. He takes food at intervals.

7th.—Has slept a little during the night; spasms unaltered; pulse 104; respiration 32. The dose of tincture of aconite increased to six minims hourly, and an aperient administered consisting of one drop of croton-oil and ten grains of extract of colocynth, which acted freely. 9 P.M.—Rigidity much less; spasms in lower extremities frequent, but not very painful, slight opisthotonos; pulse and respiration unchanged; suppuration in wound much diminished. He has felt some tingling of the fingers to-day for the first time.

8th.—A good night, with more sleep than heretofore; the spasms are weaker; pulse 84; surface warm and perspiring; pupils natural. At 5 P.M. the dose of tincture of aconite was increased to eight minims hourly. 6 P.M.—Pulse 100; respiration 32; the spasms are rather more violent; tingling of hands and feet continues.

9th, 1 A.M.—The spasms are stronger than they have been before, and appear to cause him intense pain. He cries loudly when they come on. At half-past twelve eight minims of the aconite were administered, and now ten additional minims—these large doses not having the effect of controlling or even weakening the violence of the attacks. At half-past one a drop of nicotine dissolved in spirits of wine and added to two tablespoonfuls of wine was given. His pulse was then 120; respiration 32. In less than five minutes his eyes closed, and he became more tranquil, breathed more freely, and within twenty minutes fell into a sound sleep of one hour's duration. 2 A.M.—Pulse 108. 3 A.M.—Pulse 92. He is able to put out his tongue. Sweating continues, but clammy, and devoid of snuff odour. 5 A.M.—He took a second drop of nicotine. 9 A.M.—Has had three or four hours' sleep, is refreshed, and complains but little of pain. 2 P.M.—During the morning he had frequently slight spasm, but slept at intervals. Rigidity of upper and lower extremities and masseters continues. Pulse 100; pupils natural. Given one drop of nicotine. 4 P.M.—Nicotine repeated. 10 P.M.—Pulse 140; respiration 36—40. Has rambling delirium; the arms are curved; spasms continue, and affect the right arm more than the left.

10th, 10 A.M.—Pulse 120. Abdomen covered with a pustular-looking eruption. Lower maxilla falls as he dozes; but he is unable to open his mouth. He died at 11 this morning after severe convulsion.

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ART. 42.—*A Case of Tetanus, in which the Calabar Bean was freely administered.*

By Mr. HOLMES COOTE, Surgeon to St. Bartholomew's Hospital.

(*Lancet*, March 26, 1864.)

William P—, aged thirty-five, a healthy-looking man, crushed the last joint of the right forefinger on Feb. 11th, 1864, with a heavy iron roller. A fortnight afterwards (Feb. 25th) he applied at the hospital, when he was seen by Mr. Nash, who found the whole of the last phalanx exposed, denuded of periosteum, and dead, and who very properly removed it by operation and closed the wound. In doing this the usual silver-wire sutures were employed. No unpleasant symptoms ensued until two days afterwards, when

the patient complained of stiffness of the lower jaw, a condition which he attributed to cold, and which, he added, had existed in a slighter degree from the former date (the 25th). When seen on the 28th he exhibited unmistakable evidences of trismus: the mouth could not be more than half opened, and there was some difficulty in the act of swallowing. He was admitted into the hospital, and, as the bowels were confined, one minim of croton-oil was immediately administered. He was ordered essence of beef and six ounces of port-wine daily. 7 P.M.—The croton-oil has acted freely. To take twenty-five minims of Battley's sedative solution at night.

Feb. 29th.—He slept well: bowels not open since last night; pulse 85. He thinks that he can open his mouth a little better, but the difficulty in swallowing is the same. His jaws "snapped" on several occasions during the night. One minim of croton oil to be repeated. I saw the patient at 2 P.M., and, as the bowels were still inactive, ordered two minims of croton-oil immediately. 7 P.M.—The bowels acted twice freely; the motions dark-coloured and offensive. Half-past 10 P.M.—Has been purged since 7. He says that whenever he drops to sleep, the jaws "snap."

March 1st.—Slept badly, having been disturbed by a delirious patient. Bowels not open since last note. Abdominal muscles tense. 2 P.M.—I ordered two grains of calomel and a third of a grain of opium every three hours until salivation was produced. 7 P.M.—The bowels have acted twice. He says that he should be quite comfortable except for the difficulty in swallowing.

2nd.—Slept well; pulse 88; bowels open; abdominal muscles less rigid; the jaws open more freely; the gums touched by the mercury.

3rd.—The "snapping" of the jaws disturbed his rest; abdominal muscles less rigid; pulse 88. 7 P.M.—Altogether not so well; the tongue is very sore; wound in the finger healthy and suppurating; pulse 96.

4th.—He was ordered one minim of the extract of the Calabar bean (Messrs. Bell and Co.) in glycerine (equal to four grains of the powdered bean), every hour or every two hours, according to the effect.

5th.—Jaw tightly closed; pulse 104; abdominal muscles tense. Owing to some mistake of orders, he discontinued the use of the Calabar bean after the third dose. Noon.—He was directed to resume the employment of the Calabar bean, one grain of the extract in glycerine every hour. He took one dose every hour till 8 P.M.—equal to *thirty-two grains* of the powder. No perceptible effect, but he dropped off to sleep. Twenty minutes past 10 P.M.—He awoke and took another minim.

6th, 1 A.M.—Awoke again, and says he feels easier. Ordered two drops of the extract of Calabar bean, equal to eight grains of the powder. Half-past 8 A.M.—Spasms of the limbs; pain in the pit of the stomach; pulse 104. 10 A.M.—Has taken since noon of March 5th fourteen minims of the extract of Calabar bean, equal to fifty-six grains of the powder. (One bean weighs about a drachm.) No marked improvement. 11 A.M.—Ordered to discontinue the use of the Calabar bean. To produce continued sleep, half a grain of the acetate of morphia was injected beneath the skin; also the same quantity at 1 P.M. and 4 P.M. respectively. At 1 P.M. an enema of beef-tea and brandy was administered. 8 P.M.—In a deep sleep. 10 P.M.—Pupils much contracted; still asleep. Forty minutes past 10.—He awoke, and drank twelve ounces of strong beef-tea and two ounces of brandy. He says he feels better. Pulse 136. Injection of half a grain of acetate of morphia.

7th.—He awoke and took some beef-tea and brandy. At ten minutes past 2 A.M., and again at half-past 8 and 11, one grain of the morphia was injected hypodermically. Forty-five minutes past 5 P.M.—Has slept continuously. Motions passed of a light colour; has taken nourishment,

Twenty minutes past 7 P.M.—Feels more comfortable. The morphia injection (half a grain) was repeated.

8th, 10 A.M.—Injection of a grain of acetate of morphia; pulse 128. Five minutes past 2 P.M.—The spasms are much diminished; he lies in a comfortable sleep; pulse 120, and feeble. Ordered five grains of disulphate of quinine to be administered three times a-day at proper intervals. Quarter past 11 P.M.—Injection of half a grain of the morphia.

9th.—One grain of the acetate of morphia injected. The “snapping” of the jaws diminished, and he moves his arms and speaks with ease. 5 P.M.—One grain and a half of the acetate injected. 8 P.M.—One grain of the morphia injected.

10th.—Passed a good night. At fifty minutes past 2 one grain, and at a quarter past 8 two grains, of the acetate were injected.

11th.—He seems quite comfortable. Quarter past 11.—Injection (two grains) repeated.

12th.—Convalescent.

22nd.—The medicines have been gradually discontinued.

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### ART. 43.—*On the Treatment of Hooping-cough by Ergot of Rye.*

By Dr. GRIEPENKERL.

(*Edinburgh Medical Journal*, December, 1863.)

A boy, six years of age, under the care of Dr. Griepenkerl, in 1856, had had hooping-cough for a fortnight, when he was attacked by the convulsive symptoms of ergotism, which was at that time epidemic in the Commune of Lutter. From the first appearance of these symptoms the fits of coughing ceased, and were replaced by simple whistling inspirations. At the end of a few days, when the child was cured of the ergotism, he was found at the same time cured of the hooping-cough, which had therefore lasted a much shorter time than usual. Starting from this fact, M. Griepenkerl administered ergot of rye to five children suffering from hooping-cough, four of whom, a year old, had been affected for three or four weeks, and the fifth, three years old, had been suffering for a year. In all a cure was nearly accomplished at the end of eight days of treatment. Later, in 1861, an epidemic of hooping-cough offered to the author a vast field of observation, and his experience now comprehends more than two hundred facts. The results of this investigation appear to vindicate to the ergot of rye an important place among the remedial means in hooping-cough. The failures in Dr. Griepenkerl's hands were few, and they may perhaps be attributed to the employment of ergot of bad quality. The following formula has been definitely adopted by the author as the most suitable for giving a stable compound, and one divested of the irritant properties which powdered ergot possesses:—

Ergot in coarse powder, twenty to thirty grains, to be boiled for half an hour in water with an ounce of isinglass; to this an ounce and a half of powdered white sugar is to be added.



Dose, a teaspoonful every two hours for a child from five to seven years old. For younger children the quantity of ergot is to be reduced to ten or fifteen grains for the same quantity of syrup. It is necessary during the whole of the treatment to avoid scrupulously all articles of food which contain tannin.

Dr. Griepenkerl recommends that this treatment should not be commenced until the beginning of the third week of the disease, and after all complications have been got rid of. He has remarked that the paroxysms are often aggravated during the first days of the employment of the ergot, but at the end of from five to ten days they diminish in frequency, and disappear the more rapidly in proportion as there is less concomitant pulmonary catarrh. The latter is in no respect modified by the ergot. The syrup of ergot has never been employed by Dr. Griepenkerl for more than fifteen consecutive days; he suspends its administration at the end of that time, but resumes it in a fortnight, if the cough has not been sufficiently modified. He has never seen this treatment give rise to the symptoms of ergotism.

ART. 44.—*On the Connexion of Hemiplegia of the right Side, with Loss of Speech and Valvular Disease of the Heart.*

By DR. HUGHLINGS JACKSON, Assistant-Physician to the Hospital for the Paralysed and Epileptic, &c.

(*Trans. of the Hunterian Soc.*, Jan. 29, 1864; *Med. Times and Gaz.*, Jan. 30 and Feb. 13, 1864; and *Brit. Med. Jour.*, May 21, 1864.)

Observing that in hemiplegia with loss of speech the paralysis was on the right side, and the valves of the heart were diseased, Dr. Jackson has been led to think that the middle cerebral artery might be plugged in these cases. This vessel supplies the corpus striatum, the upper part of the motor tract (the parts affected in the common kind of hemiplegia), and the cerebral hemisphere; and hence embolism of this vessel, it is argued, may lead to the hemiplegia—the motor defect, and the loss of speech—the mental defect.

Dr. Jackson, however, finds many cases of hemiplegia on record in which the middle cerebral artery was found to be plugged after death, and in which there was no loss of speech; and on analysing these cases a very curious fact becomes apparent. This is, that, as a rule, there is loss of speech when the vessel on the left side is plugged, and that there is not loss of speech when the vessel on the right side is plugged. Dr. Jackson asserts that he has never seen a case of loss of speech with hemiplegia on the left side, but has seen more than thirty with loss of that faculty in which the hemiplegia was on the right side. He observes too that although in each of the first seven cases there was valvular disease, yet taking the whole thirty cases together, it was found in about half only.

In a letter to the *British Medical Journal*, May 21st, Dr. Hughlings Jackson alludes to loss of smell, a symptom mentioned in a

case of embolus by Dr. Ransome and Dr. Fletcher, of Manchester. In this case it was clear that there was plugging of the left middle cerebral artery; and as there was loss of smell too, Dr. Jackson suggested that possibly the anterior cerebral artery was also plugged. The middle cerebral, however, supplies the olfactory lobes in part, so that the defect in smell may be due to obliteration of this vessel. Dr. Hughlings Jackson has found loss of smell, in two out of four cases of hemiplegia with loss of speech; but whether this is due to plugging of the middle cerebral artery, or to plugging of the anterior as well, must be doubtful until post-mortem examinations on cases have been made in which the symptoms have been accurately noted during life.

In a series of articles on softening of the brain by Dr. J. W. Ogle, several cases of embolism of the middle cerebral artery are recorded. They go to confirm the view that Dr. Jackson has arrived at, that plugging of the left middle cerebral artery is oftener attended by loss of speech than plugging of the right.

It need scarcely be remarked that by defect of speech is meant not difficulty of articulation, nor loss of voice, but loss of power either to form ideas, or to find words for them. In most of these cases the patients can't write when they recover the use of the right arm. It is a mental defect which has recently been described by Trousseau under the name of *Aphésia*.

Some years ago M. Broca pointed out that disease of the left side of the brain only produced loss of speech. Dr. Jackson mentions this fact, and tells us at the same time that he arrived at his own conclusions quite independently.

#### ART. 45.—*On Some Cases of Local Paralysis.*

By Mr. PAGET, Surgeon to St. Bartholomew's Hospital, &c.

(*Medical Times and Gazette*, March 26, 1864.)

The subject of a recent clinical lecture by Mr. Paget at St. Bartholomew's Hospital was a man, aged twenty-three, who was in the hospital with total paralysis of the left upper extremity. From the house-surgeon's note it appears that five weeks ago he was driving a cart, while in good health, and was pitched out of it upon his head. He was stunned, and remained insensible in the London Hospital for fifteen or sixteen hours. At the same time he cut his face and bruised his left elbow. On recovering himself he found he could not use his left arm. He does not know what parts of his body were injured, but he knows that he never had any bruising over his neck or upper arm; but there are still bruise-marks along the fore-arm. With the exception of transient headache, he suffered no inconvenience from cerebral disturbance.

He left the hospital at the end of nine days with his limb useless to him. He has attended there as an out-patient without any improvement from rest of the limb or friction with liniments. Soon the arm began to waste, and occasionally he has had very intense

pain from the shoulder to the fingers. He looks well, and feels in perfect health. His left arm hangs heavily in his other hand; he has absolutely no power over it, and can only lift his shoulder. On his thumb and fore-finger are two sluggish ulcers, the result of his holding his hands closely to a fire without feeling it too hot. The upper arm is very flabby and wasted; the fore-arm the same, though in a less marked degree: it feels slightly warmer than its fellow. He has no sense of temperature, and does not know whether his finger is dipped into hot or cold water. The limb is rather dusky than the opposite arm, but there is no sensible difference in the pulse on either side. Sensation is better in the upper and inner part of the upper arm than in any other portion of the limb, perhaps from the intercosto-humeral nerves being unaffected; but there is also some sensibility in the outer part of the upper arm. The left pupil is smaller than the right, but both act equally well, and there is no defect of sight in either eye.

"The condition of this man's arm must be ascribed," Mr. Paget says, "to some injury of the brachial nerves—probably, though it is not evident how it happened, to an injury of the brachial plexus at the base of the neck or in the axilla. Such concussion as he suffered is not at all likely to have caused complete paralysis of one arm without any other symptoms of injury to the brain or spinal marrow; and the characters of the paralysis, its completeness, the coldness of the limb, its wasting, and the occasional severe pain, and the sloughing of the skin after moderate heating, are just like the consequences of division or great damage of the nerve-trunks. Nearly all these things have been observed in two other cases that I have seen. In one of them (a little girl about seven years old) a ladder fell on the back of the left shoulder, and then broke her leg. The exact manner of its fall was not known, but the integuments over the scapula and by the side of the neck were severely bruised. She was stunned and unconscious for less than ten minutes, and then perfectly recovered her senses. As soon as she had recovered from the shock she called out, 'Where's my arm?' and from that moment to the time at which I first saw her (about four months after the accident) there had been perfect insensibility of the arm. It had been for a time painful subjectively, and there were some kinds of contact which distressed her, but she could feel no common touch, no heat or cold, and had only morbid sensations either spontaneously or from some irritation. There had been also total loss of motion in the arm till within a month before I saw her, when the pectoral and posterior scapula muscles had regained slight power. Every part of the arm had greatly wasted, and it was habitually cold, with slight swelling and congestion of the hand.

"Cases of so complete paralysis and of wasting and neuralgia of a whole limb from an apparently insufficient injury of its nerve-trunks, and with no signs of injury of the brain or spinal cord, are very rare. But cases in some degree resembling them are those of an arm or leg, from violent pulling. Violent dragging at a dislocated humerus has been followed, I believe, by paralysis of the muscles not only of the shoulder but of the whole arm; and more simply, a child lifted

by the arm has had permanent paralysis of that limb. And the force required to do this is not great—one child may thus paralyse the limb of another.

"Some years ago I was consulted about a little boy, nine or ten years old, whose left arm, when he was an infant, was violently pulled by a little brother, and from that time for a long period appeared powerless. But he had gradually gained some use of it, and, when I saw him, could move it in any way, and was fond of climbing with it. It was, however, comparatively very weak, and was small, like one extremely emaciated. It was not short, but altogether not more than two-thirds of the size of the other.

"Such injuries are rarer in the lower extremity, but here is an instance of one:—

"A gentleman, nearly three years before I saw him, was thrown over his horse, and dragged along for a quarter of a mile with his right foot in the stirrup, and with his face downwards, and his left hip-joint exceedingly on the stretch. Since that time he had had partial paralysis of the right limb, lately rather increasing. He dragged the limb after him, but it was little if at all wasted, and the muscles on the thigh acted moderately well.

"Another group of cases, which are probably of the same kind, are those in which pressure upon the nerve-trunks, either severe or long continued, may have similar consequences.

"It has happened that a man going to sleep with his arms hanging over the back of a chair has, on awaking, found both arms paralysed, and so they have long remained—a result that we can ascribe only to pressure on the brachial nerves producing a more abiding consequence of the same kind as that numbness and so-called deadness of the limb caused by sitting on the ischiatic nerve.

"I have known a similar result follow tight ligature.

"A gentleman, subject to epilepsy, consulted me a few years ago, and gave this history of the case:—He was a strong muscular man, and in the two years before had had several slight and some severe epileptic seizures, and the slighter ones were generally preceded by half-a-minute's mania. In one of these, a month before I saw him, he was seized by six labourers, who, in their fright, and against his violent resistance, tied him down, and tied his feet and hands and arms with strong thin cords. The cords on his feet and body gave him only temporary trouble; but those on his arms and wrists did greater damage. They were twisted and tied as tightly as possible, and kept on for a long time, I think for some hours. The marks of some of their coils, in bands of bruised and brownish skin, were still distinct when I saw him. When he was set free, his hands and wrists were powerless and insensible; he described them as 'dropping,' like those of one with lead palsy. Soon after the arms began to swell, and in the next four or five days they were in such a state of inflammatory oedema that it was expected that portions of them would slough, or that there would be extensive suppurations, as with phlegmonous erysipelas. For three weeks after the injury he scarcely slept, on account of the severe pain in the injured parts. After the swelling subsided (which it did

without suppuration) he began to regain slight power over the muscles, and slight and increasing sensibility of the hands; but at the same time, as well as, perhaps, during the swelling, a considerable wasting of the muscles of the fore-arms and hands ensued, so that, though they had been very robust, they now quickly became slender and puny. His general health suffered, but not severely. When I saw him his condition was greatly improved, and he seemed evidently recovering all that he had lost. His arm bore still the marks of the cords both above and below the elbows. All the muscles below the elbows were wasted; but the wasting was chiefly evident at the wrist, and, most of all, in the muscles of the ball of the thumb and of the little finger. Both his hands were ready 'to drop' when he raised his fore-arms; but he could just hold up his left hand, and in this he could just bring out finger to the thumb, &c. In this hand, too, he had regained sensibility, enough to feel when and where any part of it was touched, but not enough to discern objects minutely. The hand had fairly regained its shape and size, but the skin of the finger was smooth and glossy, and the cuticle of all the palmar surface had peeled. The right hand had recovered very little power: he could scarcely raise it, could hardly bring any finger to the thumb, and could hold nothing. Except in a few parts here and there, also, the skin of this hand was nearly, or, in some places, completely insensible. Both hands were occasionally the seat of pain; they were both also very apt to become cold; movement and pressure did not increase the pain. There was no displacement or injury of bone or joints, and no deep-seated disease could be felt. The general health was good, and the pulses were natural."

Mr. Paget then cites another case of a somewhat similar kind, and then proceeds to say—

"In both these cases the loss of power and the defect and disorder of sensation were so much greater than any other consequences of the injury that one cannot doubt a predominant injury of the nerves in the fore-arm. But its effects were complicated by the damage of the muscles and fibrous textures, and the consequent hardening and adhesion of their structures.

"From all the cases together, it is evident that long-continued paralysis of both motion and sensation, attended with rapid wasting, and more or less of neuralgia, may ensue as a consequence of such injury of nerve-fibres as, probably, falls far short of rupture or destruction of their substance, and that these things, in an extreme degree (as in the young man now in the hospital), be due to an injury which, neither in its manner of occurrence nor in any other attendant character, would seem to have fallen with special severity on the nerve-trunks. It would seem as if the nerve-trunks might be rendered long incapable of their functions by such injury as, when occurring to the brain or spinal cord, we call concussion.

"I am not acquainted with any case of the kind in which actual examination showed the state of the nerves. The exact pathology of the case is therefore unknown to me.

"But of their treatment. It must be somewhat different in the

cases of simple paralysis and in those that are complicated with inflammatory hardening of textures, neuralgia, and other various symptoms.

"For the former—for that of the man in the hospital, for example—the main design must be to maintain the nutrition of the limb, notwithstanding its inaction. And for this purpose there must be provided, in addition to whatever may be required for the maintenance of vigorous general health—

"1. Constant warmth of the limb; the whole body must be warmly clothed, the paralysed limb and its fellow especially so. No good or quick repair will take place in a cold limb.

"2. Regular friction and shampooing, especially circular shampooing.

"3. Localized galvanism, that every several paralysed muscle may be made to contract.

"4. Constant voluntary efforts; constant endeavours to attain every lost movement; and when any such endeavour is effectual, frequent exercise of the recovered power.

"5. Swedish gymnastics, *i.e.*, set exercises for each muscle in which power is not wholly lost.

"6. Guards against distortion from unbalanced actions of muscles, especially contracted fingers or elbows.

"With these things patiently, that is, year after year continued, much good may be achieved. In the case already mentioned as exactly like that of the young man in the hospital, great good has been gained by a year's treatment; she can now move the elbow in flexion and extension, and draw the upper arm inwards, and slightly bend and extend the fingers. There are very distinct sensation in the whole arm and hand, and freedom from all pain; the natural temperature has been restored, and she has ordinary sensations of heat and cold. Galvanism seems to have done special good; the arm was observed to become weaker when it was omitted for a week.

"But for the more complicated state, though the treatment must be essentially the same, it must be gentle, with less of galvanism, and less force of movement, and less of voluntary exercise, for these can rarely be borne as they can be in the cases of simple paralysis.

"In both the cases which have been referred to of complicated injury to the structures above the wrist much improvement has taken place. Two years after the accident the first of these cases was reported to me as being much better: and of the second, the last note that I have (more than two years after the injury) is, that the hand was much better; the thumb and fore-finger could be easily brought together, and all the fingers had become much more moveable.

"Two symptoms referred to in some of the preceding cases deserve particular notice—namely, what I have called the glossy state of the fingers, and the inequality of the pupils.

"Glossy fingers appear to be a sign of peculiarly impaired nutrition and circulation due to injury of nerves. They are not observed in all cases of injured nerves, and I cannot tell what are the peculiar

conditions of the cases in which they are found ; but they are a very notable sign, and are always associated, I think, with distressing and hardly manageable pain and disability. In well-marked cases, the fingers which are affected (for this appearance may be confined to one or two of them) are usually tapering, smooth, hairless, almost void of wrinkles, glossy, pink or ruddy, or blotched as if with permanent chilblains. They are commonly also very painful, especially on motion, and pain often extends from them up the arm. In most of the cases this condition of the fingers is attended with very distinct neuralgia both in them and in the whole arm, and its relation to disturbance of the nervous condition of the part is, moreover, indicated by its occasional occurrence in cases where neuralgia continues after an attack of shingles affecting the arm. In two such cases I have seen this same condition of the fingers well marked, and only very slowly subsiding, and seeming unaffected by the ordinary treatment of neuralgia.

"The inequality of the pupils is well marked in the man now in Darker Ward. The pupil on the injured side is always smaller than the other, but they both act equally well, and there is no defective sight. The same condition has existed ever since the injury in the young lady whose case I related next after his. Her right pupil, corresponding with the paralysed right arm, is always smaller than the left, and there is a very slight appearance, which is said to be increased when she is not in perfect health, as if the right eye were a very little smaller or less open than the left.

"My attention was called to the existence of this inequality of the pupils by Dr. Hughlings Jackson, who suggested also what seems not improbable, that it may be due to the relations of the brachial plexus to the cilio-spinal portion of the spinal cord."

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ART. 46.—*Clinical Researches on the Pathological Condition of the Sympathetic in Progressive Locomotor Ataxy.*

By Dr. DUCHENNE, of Boulogne.

(*Gaz. Hebd. de Méd. et Chir.*, Fév. 19 and Mars 4, 1864.)

These researches formed the subject of a memoir read by Dr. Duchenne at a meeting of the Medical Society of the Seine, February 5, 1864. Some time previously an interesting communication had been made to the society by Dr. Voisin, relating to certain "oculo-pupillary" phenomena which he had observed in a case of progressive muscular atrophy with fatty degeneration. The atrophy affected both upper extremities, and there were, at the same time, contraction of the pupils and flattening of the cornea. The muscular lesion was, by Dr. Voisin, referred to atrophy of the anterior spinal roots, which has often been noticed in such cases, whilst he attempted to show that the oculo-pupillary phenomena were a symptomatic expression of atrophy of the anterior roots of the upper dorsal nerves. In fact, he regarded the case as affording a pathological confirmation of a physiological fact elicited from some

ingenious experiments of Claude Bernard, namely, that contraction of the radiating fibres or dilator muscle of the iris is governed by the anterior roots of the two upper dorsal nerves.

In the course of the discussion which followed, Dr. Duchenne mentioned that he had noted contraction of the pupils in persons affected with "progressive locomotor ataxy;" but that during the paroxysms of pain which form a prominent feature of the complaint, the contraction was replaced by dilatation of the pupils. In many of those cases there was also an increase in the vascularity and temperature of the eyeball, so that Dr. Duchenne believed the phenomena to be due to a morbid condition of the sympathetic in the neck. The object of his present memoir is to try and elucidate this novel point in the history of "progressive locomotor ataxy." The author begins by relating the particulars of four cases, in three of which contraction of the pupils was replaced by dilatation during the paroxysms of pain, whilst in the fourth the contraction was permanent.

**CASE 1.**—This patient, an aged female, had for twenty-three years suffered from the characteristic pains of locomotor ataxy. She had double amblyopia, fifteen years after the setting in of the complaint, followed by complete amaurosis, with atrophy of the optic disc. The deficiency in motor coordination had only shown itself five years after the last date, concurrently with agonizing pains.

Dr. Duchenne noted the extreme contraction of her pupils, and was subsequently informed, by the friends who attended her until her decease, that her pupils usually dilated enormously during the paroxysms of pain.

**CASE 2.**—M. X., a retired merchant, residing in Paris, aged fifty-eight, of a good constitution and habitual sound health, without any previous syphilis, or any other known cause, acquired or hereditary, became suddenly affected, in 1848, with diplopia and left internal strabismus, followed soon after by impairment of vision. The diplopia lasted a few months only, but the amblyopia became gradually worse. In 1850 he became subject to peculiar pains, attacking sometimes the left and sometimes the right lower limb, recurring at varying intervals, affecting well-defined spots, deep-seated and boring in character, and passing through the limb with the rapidity of lightning. During the paroxysms there was acute hyperæsthesia of the skin over the painful spots, exaggerated by the gentlest touch, but relieved by deep pressure. There was no change in the colour of the integuments.

For the first two years these pains attacked him only at rare and distant intervals, but they gradually became more frequent and severe. His sexual power diminished also, and was soon completely lost. When M. X. came under Dr. Duchenne's observation, for the first time in 1862, the following notes were taken of his case:—No paralysis of the sixth pair; total blindness; compression as well as galvanism of the eyeball produce no luminous circles in the dark. Ophthalmoscopic examination shows the optic discs to be of a dull white colour, and the retinal vessels to be atrophied. There was contraction of both pupils, which dated many years back. Simultaneously with the occurrence of contraction of the pupils, increased vascularity of the eye had shown itself, so highly marked at times that there was not only intense redness of the oculo-palpebral conjunctiva, but injection also of the radiating vessels round the circumference of the cornea, as in scleritis or tritis. Yet none of the results of inflammation had followed: the cornea was perfectly transparent, without any ulcerated spot, and the eyelids were



not glued together on waking in the morning. Pain in the eyeball and a sensation of heat were alone complained of.

During the paroxysms of pain the pupils dilated, and the vascular injection disappeared. Galvanism used in the interparoxysmal periods notably diminished the congestion also, but had no influence on the contracted pupil.

The latter fact need not surprise, adds Dr. Duchenne, as galvanism can only produce contraction of the pupil.

CASE 3.—A stonemason, aged forty-nine, became affected, in 1854, with the peculiar pains of locomotor ataxy. In 1858 he had diplopia, which persisted for a short time; in 1859 incoordination of the movements of his lower limbs showed itself, and now they are thrown about wildly when he attempts to walk. In 1862 he complained of impairment of vision, followed the year after by atrophy of the optic disc. There is considerable contraction of both pupils, which dilate largely, however, during the paroxysms of pain, and the vessels of the eye are habitually congested. A solution of atropine, dropped into the eye, produces no dilatation of the pupil.

CASE 4.—A boy, aged twelve, was admitted into the Hôtel-Dieu affected with progressive locomotor ataxy in the second stage of the disease. His pupils were contracted, but *did not dilate* during the paroxysms of pain. Atropine did not dilate them either. Vision was good.

After stating that other cases similar to the one last related have come under his observation, the author proceeds to inquire whether those peculiar phenomena admit of a physiological explanation.

He first excludes the idea that they can be due to a morbid condition of the third cranial pair of nerves, for experiments on lower animals and decapitated criminals have well established the fact that irritation of the third cranial nerve can only produce contraction of the pupil. Defective action of the nerve can therefore be followed by permanent dilatation only of the pupillary aperture, whereas in the three first cases narrated above, the pupils were ordinarily contracted, and only dilated during the paroxysms of pain.

Dilatation of the pupils has been seen by Dr. Duchenne in many cases of locomotor ataxy, but in those cases when it was due to a morbid condition of the third pair it was permanent, did not occur during the paroxysms of pain only, and was never replaced by contraction at other times. Further, although it might be at first an isolated symptom, it was soon followed by paralysis of the upper eyelid, and of the muscles of the eyeball supplied by the third nerve.

The author next considers whether the phenomena observed by him belong to the class of those which have been termed by Claude Bernard "oculo-pupillary." This eminent physiologist has indeed shown that intravertebral section of the anterior roots of the two upper dorsal nerves produces contraction of the pupil, replaced by dilatation on irritating the peripheral ends of the divided roots.

Post-mortem examinations having shown, however, in almost all cases of progressive locomotor ataxy that the anterior columns of the cord were healthy, whilst the morbid lesions were confined to the posterior spinal roots and certain portions of the posterior columns of the cord, Dr. Duchenne rejects this mode of production also.

In his opinion there is but one way of explaining the phenomena in question, namely, that they are due to a morbid condition of the sympathetic in the neck. For it has been experimentally shown, chiefly by Claude Bernard, that irritation of the sympathetic in the neck produces dilatation of the pupil, whilst complete section of the nerve is followed by contraction of the pupil and an increase of temperature and vascularity of the eyeball; in fact, the very train of symptoms noted in the three first cases related above. A further point of resemblance is found in the absence of all the ordinary products of inflammation, so that these pathological facts are in accordance with physiological experiments of Snellen, showing that the hyperæmia, sequential to a section of the sympathetic, not only gives rise to no inflammation whatever, but seems even to prevent inflammation if any attempt be made to excite it in the hyperæmic parts.\*

Again, in the second case related above, the vascular congestion of the eyeball disappeared during the paroxysms of pain, and the same result was obtained from galvanic irritation of the eye, precisely as in physiological experiments the hyperæmic is removed by irritating the divided ends of the sympathetic.

If, Dr. Duchenne adds, the phenomena noticed in progressive locomotor ataxy be not so marked as those obtained in physiological experiments, the reason obviously is the smaller and variable degree in which the cervical portion of the sympathetic is affected in locomotor ataxy. In that way may be explained, he thinks, the absence during the contracted state of the pupil of any flattening of the cornea, and, in many cases, of increased vascularity also. The lesion of the sympathetic may even be so limited that no other functional disturbance results than contraction of the pupil without dilatation during the paroxysms of pain, as in Case 4.

The author concludes his memoir with a review of the present state of knowledge of the pathological anatomy of progressive locomotor ataxy. He takes the opportunity at the same time of expressing his regret at having, in previous publications, too hastily referred the symptoms to some affection of the cerebellum. Further observation has shown him that the vertiginous titubation dependent on diseases of the cerebellum, and which so much resembles that of drunkenness, can, with care, be distinguished from the incoordination of movements of locomotor ataxy.

In this strange malady whenever anatomical lesions have been disclosed by dissection they have in most cases been found seated in the posterior spinal roots and the posterior columns of the cord. If the incoordination, during life, had shown itself in the movements of the lower limbs alone, the lesions were found in the cauda equina and the lumbar portion of the posterior columns of the cord. If the movements of the upper limbs had been affected as well, the lesions were found to extend into the dorsal and cervical regions of the cord.

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\* Snellen, "On the Influence of the Nerves over the Phenomena of Inflammation." Utrecht, 1857.

Gelatiniform degeneration of the diseased portions of the cord was detected with the unaided eye, whilst microscopical examination disclosed atrophy of the nerve-tubes, and the presence of a large number of nuclei and amyloid corpuscles.

In spite of these facts, however, Dr. Duchenne refuses to substitute the name of "atrophy of the posterior columns of the cord" for that of locomotor ataxy suggested by the symptomatology of the disease. He further states it as his opinion that locomotor ataxy is not the only affection in which there occur gelatiniform degeneration and atrophy of the posterior spinal roots and posterior columns of the cord; that this anatomical lesion, thus localized, is not constant; and lastly, that it is not the only one, as he has seen it seated in the *anterior roots* also.

#### ART. 47.—*Defects of Sight in Diseases of the Nervous System.*

By Dr. HUGHLINGS JACKSON, Assistant-Physician to the London Hospital and to the Hospital for Epilepsy and Paralysis.

(*Medical Times and Gazette*, April 30, 1864.)

"It is of as much importance to the physician," says Dr. Jackson, "to distinguish the various kinds of amaurosis occurring in brain disease for their value as symptoms, as it is to the ophthalmologist for treatment as diseases of the eye. As six of the nine cranial nerves—the optic, third, fourth, fifth, sixth, and portio dura of the seventh (for the orbicularis and tensor tarsi) have more or less to do with sight, a knowledge of diseases of the eye is of the very utmost importance in the investigation of intracranial disease."

He first speaks of diphtherial "amaurosis," and points out that this is now known to be merely a derangement of the mechanism of the organ of vision—in physiological language, a loss of accommodation, and in anatomical language, paralysis of those branches of the third nerves which pass through the lenticular ganglion to the iris and ciliary muscle—and not an affection of the retina, optic nerve, or central nervous system. He suggests that there are similar defects of the other special sense organs.

After this he relates instances of choroiditis occurring, with paralysis (hemiplegia and paraplegia) in a family of children, two of whom had the form of teeth described by Mr. Hutchinson as characteristic of inherited syphilitic taint. Here he remarks that one great use of the ophthalmoscope to the physician is to enable him to investigate diseases of *tissue*, even when the eye may be so hopelessly damaged that exploration of it for treatment as an organ would be of no use. When, in a patient who has the remains of choroiditis, hemiplegia begins gradually, and especially if preceded by limited pain in the head, there are, he thinks, reasons for believing that the *pia-mater* is suffering as the analogous tissue, the choroid, had previously suffered.

Apoplexy of the retina, which occurs so often in Bright's disease,

but which is sometimes seen in young and healthy men, is of great importance as a symptom as well as an eye disease. Dr. Jacob long ago alluded to this local apoplexy as a precursor of a general one, and Dr. Jackson relates two instances in which apoplexy of the retina was preceded and followed by cerebral apoplexies. The retinal degeneration found in chronic Bright's disease ought, he fancies, to be studied by physicians. It is of great value as demonstrating that we have something more to deal with than kidney disease. The eye is to be looked on as a field for the study of diseases of tissue as well as an organ for important functions.

There is, Dr. Hughlings Jackson says, another form of amaurosis which he has now seen a good many times. The following, speaking generally, are the ophthalmoscopic appearances; they are described from one case lately under his observation:—For about three times the size of the optic disc was a patch which obscured the natural disc. It was in parts white and in parts of a brick-red and spattered with blood. No arteries could be seen in it, but the veins were bulky and were irregularly seen, as they seemed to struggle their way through the patch to the centre of the disc.

This kind of amaurosis has been found in cases of tumour of the brain. Dr. Jackson says he has seen it once in a case of apoplexy of the middle lobe in a young man, in apoplexy of the anterior lobe in a young woman, and in several cases of cerebral tumours in different positions. He has now under care a case in which, with paralysis of the third nerve on one side, and hemiplegia on the other, this condition was found; and a similar case has recently been pointed out to him by Mr. Ernest Hart. It is difficult to account for the production of this kind of amaurosis, but it has not, Dr. Jackson thinks, been yet much studied, at least in England, perhaps for this reason, that such cases come under the care of the physician—to whom the amaurosis is but a symptom of severe brain disease—rather than of the ophthalmic surgeon, who sees amaurosis as a disease of the eye, and not merely as one symptom of intra-cranial disease.

The ophthalmoscopic appearance most commonly met with by the physician, however, is that in which the optic nerve is quite white—white atrophy. Sometimes, but very rarely, one eye only is affected. These exceptional cases, however, are generally to be easily explained. The following case was probably one of embolism of the central artery of the retina:—

A few months ago a patient attended for giddiness, and just mentioned that for two years he had been blind of one eye, the right. He had had much advice, and did not come for the eye disease, but such a symptom was not to be lost. The optic disc was atrophied, the arteries and veins small, and he had a loud mitral murmur. He was assured that the blindness was due to the heart, and perhaps the giddiness too. He did not attend for some time, having had an attack of hemiplegia.

Dr. Jackson then speaks of cases of blindness of one eye (with the ophthalmoscopic signs of white atrophy) where some one or more of the nerves of the orbit are paralysed on the same side. Such associations sometimes occur in patients who have received blows

on the head, and point plainly to disease either within the orbit or at the point of entrance of the nerve. He then speaks of the cases of defect of vision called hemiopia—half-blindness of each eye—due to disease of one optic tract; or, if we speak loosely, of the optic nerve before the chiasma. He had only seen two cases of this kind—one under the care of Dr. Brown-Séquard, and one when he was Clinical Assistant at Moorfields. In Dr. Brown-Séquard's case the patient had paralysis of one third nerve and partial paralysis of the other, and hemiplegia. As the patient squinted, he knew that he had lost the sight of half of each eye. But in the other case Dr. Jackson had seen, the patient did not know that he had lost half the field of vision of each eye, as the good half of one covered the lost half of the other. The patient under the care of Dr. Brown-Séquard died imbecile, and was, before his death, completely blind. The difference in the ophthalmoscopic signs in the period of half-blindness and of total blindness was most interesting. During the condition of hemiopia the discs were quite normal, but when total blindness came on both were quite white. This case seems to show that in hemiopia there is enough function to keep up the nutrition of the optic nerves, but that when, from further disease (probably encroachment to the commissure, or to the opposite optic tract), the function is entirely lost, the nerves atrophy.

But, as before said, the common form of amaurosis in brain disease is that in which are found the ophthalmoscopic appearances of white atrophy on both sides. It is well known that blindness is found associated with disease of almost any part of the brain; but sometimes with other symptoms it is of great help to locate disease. For instance, Dr. Jackson has under his care a boy about twelve years of age, who has double amaurosis, whose head is twice its natural size, and who some time after these symptoms lost power in all his limbs. In such a case it seems all but certain that there is a tumour of the vermiform process of the cerebellum pressing on the corpora quadrigemina, causing the blindness, and on the vena Galeni, causing hydrocephalus. In another case the patient had double amaurosis and great fulness of the veins of the eyelids, so that a surgeon, under whose care she was at first, called the disease varicocele of the orbits. She had also constantly pain which she described as being "in the eyes far back in the head." A tumour was found at the autopsy situated at the sella Turcica.

In many cases, however, it is very difficult to account for the blindness. Sometimes it occurs with paraplegia, and too often to be a mere coincidence, sometimes with hemiplegia, and then Dr. Jackson supposes it and the hemiplegia frequently to follow attacks of epilepsy, or perhaps rather epileptiform seizures. He relates one case in which temporary defect of sight and temporary spasm of the arm were followed by amaurosis and hemiplegia, and suggests that as one middle cerebral artery supplies parts of both optic nerves and also one corpus striatum, an affection in the range of this artery will account for the production of the apparently incongruous symptoms—blindness of *both* eyes and paralysis of *one* arm and leg.

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ART. 48.—*Topical Injections of Strychnine in Cases of Paralysis of the Facial Nerve.*

By M. COURTY.

(*Dublin Medical Press*, January 13, 1864.)

M. Courty, Professor of Surgery at the Faculty of Montpellier, having succeeded in controlling severe neuralgic pains by injections of strychnine, tried them likewise in paralysis of the facial nerve, as well as loss of the power of movement in other parts. In different cases of paralysis, and especially in chronic cases, the result was not favourable. The author succeeded, however, in a case of paraplegia; the patient, a woman aged forty-five, having been thus paralysed for twelve months. Many remedies had been tried; but a few injections of strychnine on a level with the inferior extremity of the spinal marrow sufficed for the cure. Success was also obtained in three cases of recent facial paralysis. The first patient was a man of fifty-six; the second, a lady of twenty-five; and the third, a young lady of twenty-two. They were all in the early stage of the disease; and the strength of the solution varied from one in a hundred to one in seventy. A few drops (from eight to sixteen) were injected along the course of the facial nerve, between the stylo-mastoid foramen and the neck of the lower maxilla. The injection was repeated every second or third day. All the muscles of the face recovered the faculty of movement after from three to six injections, in about ten days or a fortnight. The author states that no relapses have taken place in these cases.

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ART. 49.—*On Infantile Paralysis.*

By Dr. CARL HEINE, of Cannstatt, Würtemberg.

(*Medical Times and Gazette*, November 28 and December 5, 1863.)

Dr. Carl Heine's object in this paper is to describe the most usual form of infantile paralysis—the form to the investigation of which his father, Dr. J. de Heine, has paid especial attention for several years. The account of the disease is particularly clear and satisfactory, and the remarks upon diagnosis and treatment are well worthy of notice. That the disease is really of spinal origin, as Dr. Heine, the father, maintained, is clearly made out in this paper. The extracts which we give bear chiefly upon its symptoms of invasion, the character of the paralysis, and the secondary consequences of the disease.

“The true infantile paralysis, to which I here particularly refer, is undoubtedly the most common form of paralysis in infants, and by far the majority of paralytic deformities belong to it, so that very often in cases of this kind the description of paralysis in infants in general appears to be founded. It is the paralysis which Rilliet

called by the unfortunate name of 'Essential Paralysis.' The same affection is the 'Idiopathic Paralysis' of Bouchut (or, the 'Rheumatic Paralysis,' as others prefer to call it), although he included in that term other cases not strictly belonging to it. It is the 'Fatty and Atrophic Paralysis' of Duchesne, who, as I know from personal knowledge, plainly discerns the peculiarity of this disease, and entirely agrees with my father in his principal views. It is, in short, the form of paralysis the cause and starting-point of which my father, supported by Romberg's great authority, declared to be caused by a lesion of the spinal cord, and called 'Paralysis Infantilis Spinalis.'

"In the space of thirty-four years my father, at his large orthopædic establishment in Cannstatt, has had under his care nearly 200 cases of this particular form of disease, and about 250 cases of paralysis in infants of all kinds. It is only relying upon such a long and uninterrupted series of observations, and having shared in a great measure this experience, that I dare attempt to enter on the present discussion.

"Varied as the interpretation of the pathology and the explanation of the cause appear to be amongst authors, equally remarkable is their harmony in describing the clinical history of the disease. They draw, wherever they describe cases of the same kind as my father's, with the same pencil, the same shadings, even almost with the same words, the typical portrait of the thoroughly characteristic symptoms. These symptoms, of high value for diagnosis, are briefly the following:—

"At the earliest age, usually within the first two years of life (rarely before the sixth, and rarely after the twenty-fourth month), children, for the most part well-formed and in good health, are suddenly seized by an attack of fever, with general irritation, convulsions, and not seldom severe cerebral symptoms, frequently accompanied by disturbance in dentition, great restlessness, starting in sleep, and sudden screaming. The storm lasts only a short time, often not more than one night, and abates as it arose, or it is repeated a few times, and terminates as a rule by leaving a paralytic affection, usually severe and of large extent, affecting with preference the lower extremities. In some cases the onset is less intense, the feverish symptoms light, and, without suspecting the serious consequences, the parents discover in the morning when the child gets up that it lets one leg or one arm hang powerless. In a few cases a general uneasiness, occasioned by teething, precedes the attack; complications with vomiting, diarrhoea, and cutaneous eruptions are rarely observed. The short acute or feverish stage ceases with the appearance of the paralysis, and the internal morbid process of which I shall speak later seems to cease.

"The cerebral symptoms also, so far as they existed, disappear completely, and no longer constitute the slightest part in the disease. What may be the influence of dentition is difficult to state, yet I imagine that it is of more importance than any other source of irritation. Never (that is to say, in no one of my father's 200 cases) has the affection been found to be congenital, and I feel induced to

consider the supposition of a congenital defect of conformation (wherever it may be adduced) in children so healthy and vigorous, to be without exception an unfounded assumption. It frequently happens, it is true, that parents, especially after an interval of many years, are not able to recollect exactly the time of the first attack; or that, having overlooked it on account of its being slight, they date the disease, without reflecting, from the time of birth. Even in such cases it is always possible, by affording a little time for thought, to find that the paralysis came on later than they had stated.

"Severe and threatening as the phenomena of the onset sometimes appear, yet I know of no case in which death has been the direct result.

"It is evident, by the severe consequences themselves, that the lesion must be an extremely serious one, for it is reasonable to suppose that the internal derangement will be proportional to the severity of the symptoms, and this alone renders it impossible that the affection can be independent of any material damage to the nervous system, and proves that it must represent more than a mere disturbance in the functions of some peripheral nerves.

"Usually the paralysis extends, in the beginning, over a larger part of the body, sometimes over the whole trunk and the four extremities. In the highest degrees it maintains the territory at first seized. In others the power of movement returns part by part, and this always at first in the more central or in parts situated higher. This is worth notice as a most remarkable fact, which my father constantly met with even in the majority of the lightest cases. It deserves attention principally with respect to the circumstance that one feels in later periods a great inclination to consider a loss of power confined to single sets of muscles, for instance, a paralytic club-foot, the history of which, perhaps, has not been ascertained, as scarcely more than a purely local affection without any deeply-founded significance. The recovery from the paralysis when it occurs, however, stops after the lapse of from the first four to eight weeks; the muscles still subjected to it in that period remain paralysed for life-time, and undergo subsequently consecutive alterations. A perfect recovery of motor power never takes place in this kind of infantile paralysis, and the incurability is one of its essential attributes. Cases recorded of speedy and complete recovery are simply cases of rheumatic paralysis, as Bouchut and others described, but they cannot be associated with the class of cases here spoken of.

"The paralysis presents itself, with regard to its external seat, under three principal forms, which may be distinguished from each other;—either it spreads over both lower limbs, as '*Paraplegia Infantilis Spinalis*,' according to the name my father gives it; or only over one, as '*Hemiplegia Spinalis*' (never in these paralyses is one whole side of the body—viz., the upper and lower extremity of the same side—found paralysed together; such hemiplegias, in the real sense of the word, belong to another kind of palsy, indisputably due to cerebral lesion); or thirdly, as '*Paralysis Par-*



tialis,' limited to single sets of muscles of the leg or foot. In a small number one arm alone is paralysed. It rarely happens that the muscles of the back, which are more commonly found paralysed together with paraplegia or hemiplegia, under the form of paralytic lateral curvature of the spine, remain the only seat of the lesion.

"Amongst 192 cases of infantile paralysis in general received into my father's establishment up to the year 1860, there were 158 cases of this spinal form: and out of those, again, there were 37 cases of paraplegia, 34 of hemiplegia, and 84 of partial paralysis; 2 cases of paralysis of arm, and 1 of paralytic lordosis. 80 cases were in male and 78 in female children.

"The paralysed limbs show more particularly the following characters:—They can be bent and extended in all directions without the slightest resistance or any possible influence of the will, and dangle very much like flails when they are not supported; the skin and muscles are extremely slack; the turgor vitalis is remarkably diminished. Subsequently a series of secondary alterations makes its appearance. The turn of the disease begins by a decrease of temperature. This is perceivable at an early period by the mere touch of the hand. The limbs get gradually colder and colder, and the skin becomes of a red, or even sometimes of a blue colour, and with this exists a great disposition to chilblains in winter. The diminution of the temperature amounts in the worst cases, according to exact measurements, to 4° and 5° of Réaumur in the course of two years after the first attack. This phenomenon is very noticeable in comparison with other forms of paralysis, in childhood depending on an evident cerebral affection, as well as on other causes, in which case it scarcely exists at all. A comparison of temperature by the thermometer in the various kinds of paralysis afforded most interesting results, which time and space will not allow me more than to allude to here.

"Closely connected with this symptom, and proceeding from the same cause, is the consequent arrest of development, the atrophy of the paralysed muscles.

"The atrophy is not immediate and contemporaneous with the loss of motor power, as has been stated; or, if it is, it escapes observation before the lapse of months. I had the opportunity of verifying this fact in a child with paralysis of the right leg, whom I examined four or five months after the attack. At that time not the slightest difference in the length and circumference of both extremities was apparent, whilst the temperature was found already to be a little lower in the paralysed leg. I saw the child again half a year afterwards, and then the affected limb was not only much colder, but also decidedly thinner and a little shorter than the healthy one. Such observations, which can be made in every case, are a sufficient testimony against those who still believe that these paralyzes are consequences of previous and idiopathic muscular atrophy. This secondary atrophy sometimes goes very far; my father found in cases of hemiplegia that the circumference of the thigh and calf of the paralysed leg, after the affection had lasted four or five years,

was smaller by eight to ten centimètres than that of the other limb. In the atrophied muscles, Duchesne discovered a retrogressive fatty metamorphosis of their elements, and he thought this phenomenon important enough to give the name to the disease. The same arrest in growth, but later than in the muscles, is visible in both the peripheral and longitudinal dimensions in all other tissues, the bones, vessels, and nerves. The bones cease to grow, insomuch that the shortening of a paralysed limb, after some years, may amount to from two to six inches; the patella is often a third smaller than it should be. The thin and atrophied arteries may be recognised by the small, thready pulse. The atrophy of the peripheral nerves has been shown by post-mortem examinations.

"The sensibility in general does not suffer at all, or at least not in any remarkable degree, from this paralysis.

"The electric irritability of the paralysed muscles is entirely lost, as has been plainly confirmed by Duchesne's large experience. The local application of galvanism, even of the strongest currents, does not produce the slightest muscular reaction, nor anything else, but the usual sensation in nerves of the skin. Just the contrary will be observed in the cerebral paralysees of childhood with spasmodic character; here galvanic irritation produces the most intense contractions of the muscles, the children crying and complaining very much of pain. The loss of irritability in the former and its increase in the latter cases is so constant and well-marked that Marshall Hall proposed the use of galvanism as the best means of diagnosing these different affections. Hence follows how questionable will be the value of this remedy in the cases we are describing, a fact which hardly any practitioner now denies. In mild and recent cases only was I able to obtain a little improvement of motor power in those muscles which had been merely slightly touched by the paralysis, and to prevent by doing so their imminent atrophy. The same results have been obtained by Duchesne and others.

"The appearance of deformities resulting partly from muscular retraction in consequence of the disturbed balance between paralysed and non-paralysed muscles, and partly from the pressure of the weight of the body upon the relaxed limbs, is one of the last symptoms in the series of consecutive alterations. The deformities which the paralysed limbs undergo in length of time are extremely variable. They reach in their greatest development a much higher degree than will be seen in congenital or any other deformities. In the worst cases, especially when both lower extremities are paralysed, several deformities occur together, and their number is larger as the area of the paralysis is more extensive. The most usual deformity which occurs relatively to other deformities in the earliest period is talipes equinus. It is produced by paralysis especially affecting the anterior muscles of the leg, so that retraction of the muscles of the calf ensues; talipes varus, when the peronei have been paralysed, is produced in the same way, and talipes valgus when these latter muscles retained more power than their completely paralysed antagonists, tibialis anticus and posticus; and talipes calcaneus when the triceps suralis (gastrocnemius and soleus)

is chiefly paralysed. In the same way contractions of the knee are the result of a greater degree of paralysis in the extensors of the leg, whilst under the opposite conditions the limb presents the deformity called 'recurved knee.' In other cases the knees are bent inwards or outwards, and when the loss of motor power ascends higher up, contractions in the hip-joint and curvatures of the spine will be found. In paralysis of the arm, of the kind here described, retraction of muscles leading to deformities is exceptional. The reason may be partly that the affection, being more intense, strikes the antagonists on both sides nearly equally, and therefore there is no difference in the muscular power of the flexor and extensor; and again, partly what I believe to be of greater importance, that the paralysed arm, hanging powerless on the side of the body, by its own weight exercises a kind of self-extension, whilst it is not exposed to any pressure from the weight of the body.

"The deformities begin to show themselves at the period when the little patients make their first attempts to walk. They begin to slide on the floor; make use of the little power left by the paralysis in certain sets of muscles; develop it as much as possible at the expense of their more or less paralysed antagonists, and thus themselves involuntarily aid the retraction of those muscles by continued unilateral exercise. The later the appropriate orthopædic remedies are applied the higher is the degree of malformation to which the paralysed limbs are subjected; and it is in such a neglected state that we not seldom meet such unfortunate individuals in advanced age, with limbs entirely crippled and wasted, doubled under their unproportionally-developed trunks."

### ART. 50.—*A Contribution to the Pathology of the Crura Cerebri.*

By Dr. HERMANN WEBER, Physician to the German Hospital.

(*Proceedings of the Royal Medico-Chirurgical Society*, April 28, 1864.)

After some preliminary remarks on the rare occurrence of diseases of the crura cerebri uncomplicated with other affections of the brain, Dr. H. Weber relates the following case:—

CASE.—A man, æt. fifty-two, affected with disease of the aortic valves, hypertrophy of the left ventricle, and rigidity of the larger arteries, had, during the last years of life, frequent tinnitus aurium, a dull but moderate headache, disturbed sleep, and anxious dreams. Two months before death there occurred sudden paralysis of the *right side of the body* (limbs, trunk, and face), as to motion and sensation, and of the muscles of the *left eye* supplied by the third nerve, with dilatation of the *left pupil*; disturbance of vision only slight, viz., imperfect double vision when using both eyes combined, and impaired accommodation when using the *left eye* alone; the other special sense and the intellectual faculties unaffected; slow and irregular pulse; obstinate constipation; increased temperature in the paralysed limbs. The paralysis of the right side of the face, the soft palate, the tongue, and the trunk, had been from the beginning less complete, and became gradually

less, diminished as well with regard to motion as to sensation ; that of the limbs, on the contrary, remained almost complete with respect to motion, while the sensation gradually improved. The paralysed muscles of the left eye regained their function only very imperfectly ; and the left pupil, too, remained much dilated. The obstinate constipation continued. About eight days before death, symptoms of broncho-pneumonia and pleuritis, especially of the right side, came on. Death took place two months after the seizure.

*Post-mortem examination.* — Phenomena of recent broncho-pneumonia and pleuritis occupying the greater portion of the right lung, and existing only in a very limited manner in the lower lobe of the left lung. Hypertrophy of the left ventricle of the heart, with disease of the aortic valves (rigidity through atheromatous deposit, stenosis of the orifice, and insufficient closure). Extensive atheromatous affection of the arterial system, and especially of the cerebral arteries. Hæmorrhage into the inferior and internal portion of the left crus cerebri, the cavity being about six-tenths of an inch long, and five-twentieths of an inch broad, and as deep ; it was situated close to the surface, and in immediate contact with the third nerve, the nerve-fibres of which were degenerated. The tissue of the crus round the cavity was hardened in the thickness of about one-fifteenth of an inch. The remainder of the left crus and the other portions of the brain were normal.

Dr. Weber remarks that the diagnosis in this case had been comparatively easy. The sudden paralysis of the right side of the body, with paralysis of the third nerve of the left side, and with immunity of the mental faculties and special senses, pointed unmistakably to an affection near the base of the left hemisphere, and in immediate connexion with the third nerve, and therefore with the crus cerebri. The fact that none of the other cranial nerves was affected indicated that the morbid condition was confined to a small spot, and the existence of the disease of the arterial system recognised during life rendered hæmorrhage more probable than any other alteration. Dr. Weber thinks under similar circumstances an almost accurate diagnosis might be always ventured.

The author then gives an account of the two only cases of an analogous nature which he had met with in medical literature : the one related by Andral (" *Clinique Médicale*," tome v. p. 339, 1834), the other by Mr. P. H. Green (" *Medico-Chirurgical Transactions*," vol. xxv. p. 195), the main symptoms of both cases being in accordance with those observed by himself. He then touches upon the symptoms produced by section of the crura cerebri in animals, especially the circus movements described by Majendie, Lafarque, Longet, Schiff, and other physiologists, the absence of hemiplegia, and the occurrence of hyperæsthesia on the side of the lesion noticed by Schiff. Dr. Weber does not endeavour to explain the discrepancy between the results of vivisections and the symptoms of disease in man. He alludes, however, to the differences in the pathological and experimental lesions themselves, and also in the connexion of the different portions of the brain between themselves in man and animals. He wishes by no means to disregard the results of the physiological experiment ; but, on the contrary, thinks that whenever any discrepancy exists, we ought to be very cautious in

drawing inferences from pathological observations. He therefore does not consider as certain, but only as probable results of lesions of the centre, the internal and lower portions of the crura cerebri in man (the only parts which were diseased in the three cases related): —1. Almost perfect paralysis of the limbs of the opposite side as to motion, and great impairment as to sensation. 2. Less complete and more transitory paralysis of the opposite side of the trunk, of the face, soft palate, and tongue, as to motion and sensation (leaving the muscles of the eye intact). 3. A similar, but perhaps more permanent, impairment of the pneumogastric and sympathetic nerves of the opposite side. 4. A great retardation in the functions of the intestinal canal. 5. Immunity of the intellectual faculties and special senses. 6. Paralysis of the third nerve on the side of the lesion, if the latter affects the nerve substance adjacent to the point of issue of that nerve.

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**ART. 51.**—*A Case in which the Right Restiform Body and the Right Posterior Column of the Spinal Cord were divided transversely.*

By Dr. WATERS.

(*Proceedings of the Royal Medico-Chirurgical Society*, April 28, 1863.)

The following is a brief abstract of the case:—

John M'Bride, a sailor, æt. twenty-three, was admitted into the Liverpool Northern Hospital about noon on the 19th of February, 1863. He had received a blow on the side of the face on the previous day from a capstan bar, which stunned him for a short time. On presenting himself at the hospital he was able to walk with assistance. When seen by the author he was in bed. He was quite conscious, understood everything, and spoke rationally and distinctly, although articulation was not quite perfect. He complained of slight dizziness of the head, and slight numbness of the right side of the face and of the right arm and leg. He was unable to swallow, and had constant hiccuph. The face was dusky; the breathing quiet; the pulse 100, and regular; the tongue was protruded in a straight line; the uvula was drawn to the right side. There was partial loss of power over the right side of the face, and right arm and leg; both these limbs could, however, be readily raised. He could open and shut both eyes. The pupils were rather dilated; the eyeballs constantly rolling about. No affection of vision or of hearing was complained of. The right side of the face and the right arm and leg were of higher temperature than the corresponding parts of the opposite side. The patient said he could distinctly feel when touched on either side of the face, on either foot, leg, or arm. Sensation appeared slightly less perfect on the right side than on the left, *but on both sides it was good*. The patient died, somewhat suddenly, at 5 P.M. on the day of admission, after an ineffectual attempt to swallow. He had survived the accident about twenty-four hours.

After death the cranial bones and the vertebræ were found unfractured. The cerebrum was healthy. There was a considerable quantity of slightly coloured fluid at the base of the skull and in the spinal canal; the venous sinuses were very full of blood; the right hemisphere of the cerebellum was slightly and very superficially lacerated on its under surface, close by the

side of the right restiform body. The medulla oblongata at its posterior aspect and right side was the seat of an extravasation of blood lying beneath the pia mater. This extravasation was into the nervous substance, and was connected with lacerations of that structure. The parts having been hardened in spirit, two transverse lacerations were found connected by a vertical one. The first or superior laceration involved the right restiform body about its middle; the laceration extended to within a very short distance of the median furrow of the fourth ventricle behind; to the outer side and in front the laceration extended as far as the line of origin of the eighth pair of nerves. Blood was effused between the lacerated parts, and separated them from each other. The nervous substance in the adjacent parts was also infiltrated with blood. The median furrow of the fourth ventricle was pushed a little towards the left side. As far as it was possible to judge, this laceration involved the whole, or very nearly the whole, of the fibres of the right restiform body, and a portion of the gray matter spread out on the floor of the fourth ventricle. None of the roots of the eighth pair of nerves was torn, but the laceration extended close to the superficial origin of the glosso-pharyngeal and par vagum, and no doubt involved their deep fibres. The second or lower laceration was situated just below and to the right of the nib of the calamus scriptorius. It had divided that part which is known as the posterior pyramid and the tract outside of it, which is the continuation of the posterior column of the spinal cord. The laceration extended about two lines into the nervous substance; it stopped behind at the median fissure, and externally it did not extend beyond the line of attachment of the posterior roots of the spinal nerves. Blood was effused as at the upper laceration. These two lacerations were connected by a vertical one, which ran down along the inner side of the restiform body, and terminated below by joining the inner part of the lower laceration. The lungs were loaded with black blood. The heart was healthy.

The author remarks that the importance of the case is in the fact that the parts which were formerly supposed by most physiologists, and still are by some, to be the sensitive tracts, were divided on one side without loss of sensation ensuing. The case is remarkable as presenting us with a repetition in a healthy man of those experiments so often performed on the lower animals by the physiologist—namely, division of certain portions of the cord or medulla.

The results of the case tend to confirm the views recently advanced by some physiologists, that the posterior columns of the cord and the restiform bodies are not the channels by which the posterior roots of the spinal nerves communicate with the sensorium, and to refute the opinion that those structures are concerned in the function of sensation.

With regard to the minor symptoms, they for the most part agree in a remarkable manner with the lesion which was found. So severe a laceration of the restiform body could scarcely happen without involving the deep origin of the facial, the glosso-pharyngeal, and the pneumogastric nerves. Hence the symptoms of paralysis about the face, &c., which have been referred to. The immediate cause of death appears to have been a sudden arrest of the function of breathing.

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## (B) CONCERNING DISEASES OF THE RESPIRATORY SYSTEM.

## ART. 52.—On Epidemic Pleuropneumonia in some Ships of the Mediterranean Fleet.

By Dr. A. BRYSON.

(Proceedings of the Epidemiological Society, Dec. 7, 1863.)

The disease is of a low asthenic or typhoid type, accompanied with great congestion, usually of the lower lobes of the lungs, and in many of the cases in the ship chiefly affected, the *St. Jean d'Acre*, with scorbutic symptoms, although the diet of the crew was in every respect as good as in the other vessels of the squadron. In the *Cressy*, too, there was an unusual prevalence of lung-disease, often of an obscure and anomalous character, which was not easy to designate. The evidences of the pulmonary tissue being congested, or even consolidated, in different parts of the chest, associated with pleurisy or pleurodynia, and with such a cachectic condition of the system as might probably lead on to tubercular degeneration in chronic cases, were the most conspicuous features of the malady. Effusion into the chest was discovered in a few instances. Diarrhœal and dysenteric attacks were common both in the early and late stages. The following table shows how very variously different ships of the squadron were affected with diseases of the lungs in the course of the year, and also with other diseases the extent of whose prevalence is usually regarded as a fair test of the healthiness or otherwise of a ship's crew. Attention should be paid to the number of the crew in each vessel, to estimate aright the marked difference in respect of the number of cases under each head in the different ships. The reader can easily calculate the ratio of attacks to the crew for himself: *a*, denotes the number of cases; *b*, cases of sickness in a year; *c*, diseases of lungs, &c.; *d*, diseases of bowels; *e*, fevers, continued and remittent; *f*, ulcers.

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>
<i>Marlborough</i> .	1145	927	129	64	10	75
<i>Agamemnon</i> .	840	881	241	58	17	30
<i>St. Jean d'Acre</i>	815	1601	401	171	136	115
<i>Cressy</i> . . .	720	1483	298	254	12	102

The deaths from disease in the *St. Jean d'Acre* and in the *Cressy* were twice as numerous as in the *Marlborough*, notwithstanding the much smaller crews of the former vessels; and the number invalidated from the first ship was fourfold as numerous. As to the chief cause of this enormous disproportion in the sickness and mortality, &c., in two ships of the same fleet and similarly exposed, it was clearly shown that this lay in the excessive overcrowding of the men at night in the *St. Jean d'Acre* on the lower deck, while in the *Marlborough* the men were more distributed on the different decks, and greater attention was paid to ventilation of the between-decks. Only fourteen inches space was allowed to each hammock in the

former ship; and so thoroughly was fresh cool air excluded from the men while asleep that the air above the hammocks was found to be from eight to ten degrees hotter than the air below the hammocks, and so offensively impure as to cause nausea to any one going down from the open air! With such a state of things it is not wonderful that the health of the ship was so bad during the two years while on the station, that it was at last found necessary to send her to England to be paid off. Besides several features of resemblance in the symptoms of the pleuropneumony in the *St. Jean d'Acre* and *Cressy* to the lung-disease in cattle, it is to be noted that there are good grounds for suspecting that the affection was communicated by the sick landed from the vessels to other patients in Malta Hospital.

ART. 53.—*The Second Medical Report of the Hospital for Consumption and Diseases of the Chest, Brompton, presented to the Committee of Management by the Physicians of the Institution.*

(London : Churchill and Sons. 8vo, pp. 56. 1863.)

The observations contained in this report extend over a period of thirteen years—from 1849 to the end of 1862. The report was drawn up by Dr. W. H. Stone. Its value is by far from being proportionate to the number of observations tabulated in it, and the length of period over which these observations extend. The cases treated within the hospital during the thirteen years amounted to 8693. Of these, 5661 actually suffered from phthisis, 522 presented one or more symptoms of phthisis, and 2510 were affected with other diseases of the chest. We cite those portions of the report which refer to hereditary predisposition and hæmoptysis.

“ HEREDITARY PREDISPOSITION.

MALES AND FEMALES.	Decided.		Doubtful.		Total.
	Males.	Females.	Males.	Females.	
Both parents .....	87	128	1	13	229
Father .....	253	221	23	39	536
Mother .....	271	311	25	42	649
Brother .....	419	411	32	58	920
Sister .....	413	469	37	70	989
Other relations .....	392	555	29	77	1053
Husband or wife .....	42	60	1	3	106
Total .....	1877	2155	148	302	4482

“ In examining the figures of this table, it becomes quite evident that the statement of the previous report is confirmed. There it



was observed that the father transmitted to the son, and the mother to the daughter, morbid tendencies in a higher degree than in the converse relations. We here find that the proportion of phthisical fathers among the male patients, and phthisical mothers among the females, preponderates considerably. The same ratio holds good with other members of the family. It will be observed that the number of male patients whose brothers, and of female patients whose sisters, had been consumptive, markedly exceeds the corresponding total.

"In many cases, of course, the same patient will have named several relations as suffering from this disease. These have been entered under both the headings in question. It has been thought unnecessary to mention the number of brothers, sisters, &c., in each case affected, though many patients have given accounts of more than one.

"The number of cases in which the husband or wife has previously been affected with the same complaint affords ground of interest, as touching on the question of the transmissibility of phthisis by other means than those of inheritance and blood relationship. The total of one hundred and six, on a gross amount of 6167 recorded cases, is hardly sufficiently large to justify any decided inference. But perhaps some value may be attached to the frequent coincidence; and the fact of its having been noticed by the patients themselves bears witness to a similar impression on their part.

"It is, moreover, to be observed that, although compared to the general total of about 6000 cases, this figure is quite inconsiderable, and tending rather to a negative conclusion; the inference ought more correctly to be made from a comparison of the widowers and widows included in the report, and those of them who offered distinct evidence of phthisical disease in their wives and husbands. Now, there are only 239 widowed persons of both sexes recorded in a preceding table, and it must have been from this comparatively small section that the 106 cases in question were mainly derived. The proportion is in this manner raised to nearly one in two."

#### "HÆMOPTYSIS—PERIOD OF OCCURRENCE.

	Decided.		Suspected.		Total.
	Males.	Females.	Males.	Females.	
Within 3 months.....	447	457	17	38	959
3 months to 6 months	389	289	22	33	733
6 " to 12 "	463	367	23	31	884
12 " to 18 "	173	78	3	12	266
18 " to 24 "	193	108	14	12	327
Beyond 2 years .....	332	164	13	24	533
Total .....	1997	1463	92	150	3702

"In the preceding report the relative frequency of hæmoptysis in the two sexes, and the period of life at which it most frequently occurred, were fully worked out.

"On the present occasion more attention has been devoted—(1) to the period elapsing between its first occurrence and admission into the hospital, and (2) to the amount of blood expectorated.

"The above table shows that, in the majority of cases, this symptom has occurred during the three months directly preceding admission. The space of time included between six months and a year before admission exhibits a slightly smaller total, but exceeds considerably the intermediate months from three to six. After a completed year the cases are comparatively few, though more frequent at the remote date.

"It is worthy of special comment that the number of cases where the hæmorrhage has occurred more than two years antecedently is very considerable; 533 such instances amount to about one twelfth of the whole number under observation.

"If hæmoptysis be looked on as one of the most decided and pathognomonic signs of tubercular disease of the lungs, its remote occurrence tends to throw backward the commencement of the affection, and to strengthen the impression that the proportion of old cases, in which either the advance has been very slow or some partial recovery has taken place, are far more frequent than former statistics have exhibited."

"HÆMOPTYSIS, AMOUNT OF.

	Decided.		Suspected.		Total.
	Males.	Females.	Males.	Females.	
Below $\xi j$ in quantity...	843	700	55	83	1681
From $\xi j$ to $\xi as$ .....	616	482	34	69	1201
„ $\xi as$ to $\xi iv$ .....	429	268	13	21	731
Above $\xi iv$ .....	343	153	9	7	512
Entirely absent .....	588	193	74	65	920
Total .....	2819	1796	185	245	5045

"In a large proportion of cases satisfactory details were procured as to the amount of hæmoptysis. It was not always easy to obtain similar accuracy in respect to the period at which it had first occurred.

"As might be expected, the majority of patients spoke to quantities under a drachm of blood, and in the general total the diminution of numbers follows very closely the increase in amounts.

"But on examining the two sexes separately, a totally different result is obtained. In the higher degree of hæmorrhage the males greatly exceed the females.

"Below a drachm, the figures may be considered about equivalent,

as rather more males than females were under observation. In the next column the males show a relative excess of above a sixth; this is increased in the third column to above a third; and in the last heading, where quantities of blood above four ounces are noted, the male figure is more than double that of the females, even after due deduction for the slight excess of male cases.

"On the other hand, the instances where hæmoptysis had never occurred exhibit a most marked preponderance on the side of the males.

"The number of the latter class, taken altogether, is remarkable for its large proportional amount. No less than 920 patients affirmed decidedly that this symptom had never occurred, all those who merely stated they had not specially noticed it having been rejected from this category.

"Of the instances of decided phthisis who had been free from hæmoptysis, about five-sevenths were males and under two-sevenths females. In the less decided cases, given in separate columns, the result is not far different, inasmuch as the number of females there under observation exceeds the males by about a tenth, and yet the male column of this table still slightly preponderates."

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ART. 54.—*On the Treatment of Phthisis by the Hot-Air Bath.*

By Dr. LEARED, Physician to the Royal Infirmary for Diseases of the Chest, and to the Great Northern Hospital.

(*Lancet*, Nov. 21 and 28, 1863.)

"When in Turkey some years ago," writes Dr. Leared, "I had frequent opportunity of experiencing and observing the effects of the Turkish bath. I became convinced that it was the only reliable means of causing diaphoresis, and that it might be most effectively employed as a remedial agent, as well as one of cleanliness and luxury. Gout, a true blood disease, is said to be unknown amongst the Turks, and this exemption is probably as much due to the free action of the skin caused by the bath as to their temperate habits. In estimating the value of the bath as a curative agent, however, the special effects of caloric on the body are to be taken largely into account. The effects of the higher degrees of heat possess a great but as yet an almost unrecognised importance.

"An opportunity of trying the treatment in question was kindly afforded me by the directors of the Turkish Bath Company in Jermyn-street. A good deal had been said or written in a general way about the beneficial effects of the bath in affections of the lungs, but it seemed desirable that its action upon phthisis should be patiently tested and fairly made public. Although resolved not to allow any theory to occupy my mind, it appeared to me that the bath was likely to prove useful in phthisis, for the following reasons:—

"First. As the functions of the skin are promoted by the re-

removal of effete matters which clog its pores and hinder free excretion, benefit might be expected from the bath regarded in a purely hygienic light. Experience proves that whatever promotes the general health of the patient tends to retard the destructive changes in the lungs.

"Second. If, as is highly probable, the perspirations of phthisis are an effort of nature to depurate the blood by excretion of offending material, the substitution of sweating induced artificially might effect the same end in a better and safer manner.

"Third. In cases in which sweating was a marked symptom, this, as well as the exhausting fever which precedes it, might be replaced by the operation of a process agreeable to the sensations of the patient, and one which, being completely within control, might be regulated according to his strength.

"Fourth. The inhalation of heated air might prove beneficial by a direct action on the lungs, as would be evidenced by check of the cough and expectoration.

"For several months at first a small private bath was employed, but subsequently the large bath was used by the patients. The temperature ranged from 120° to 180° F., and the patients remained exposed to it from half an hour to an hour or longer, the time being regulated by the action of the skin and their own feelings. Great care was taken not only to observe any improvement, but also to prevent possible harm.

"I regret that I am unable to bring forward a larger number of results. Several patients commenced with the bath, and, although well satisfied with its effects, were compelled to desist in consequence of not being able to give up the necessary time to it. But the long period during which two of the cases were under treatment, and the precision with which the facts will be detailed, give these cases unusual importance."

The first patient whose case we give died unexpectedly; but, as will be seen, death was not caused by phthisis, and the rare opportunity was afforded of examining the lungs of a phthisical patient in whom improvement of chest symptoms was going on up to the time when fatal disease of another kind set in.

CASE.—J. C.— is a man of small stature and dark complexion, forty-two years of age. His father died of phthisis; also a maternal uncle, and a sister of his own. Early in 1851 the patient had cough, and felt out of health. In May of that year he had for the first time an attack of hæmoptysis. He thinks the quantity of blood brought up was not less than a pint. It continued to come up in smaller quantities almost daily for about three months. He was at length able to attend to business, although in very delicate health. In March, 1852, hæmoptysis returned, accompanied by the same symptoms, and he was under medical treatment until September. In 1854 he was laid up from May to July from the same cause. Again in August, 1858, blood was brought up in such quantities that his life was almost despaired of, and he was under treatment until April, 1859. The cough then became a little better, but great difficulty of breathing remained. In 1860 he became an out-patient at the Brompton Hospital for Consumption, and continued so for twelve months, when he left, his breathing and cough being unrelieved. In 1861 he became for many months an out-patient at

the Royal Infirmary for Diseases of the Chest. He had the old symptoms, and blood made its appearance several times, the last time having been in November of that year.

*Present state.*—Jan. 1st, 1862: Pale and very thin, but thinks himself less so than he has been. Complains of weakness, and great dyspnoea even from ordinary walking; shooting pains in the chest, especially through the right side; night sweats, troublesome cough, with yellow sputa. The upper and anterior part of the right side of the chest is dull on percussion, and in the same position crepitation is heard over a considerable space, as also in the right axillary region. He was ordered a hot-air bath three times a week.

Jan. 27th (fourth week of bath treatment).—Has taken ten baths; says he felt benefited by the first bath; pain and night sweats quite gone; cough better, and expectoration less; what he chiefly notices is improvement in his breathing; has also a feeling of improved general health, and the bad headaches from which he suffered at short intervals for years have entirely left him; bowels regular; except for cough and slight dyspnoea, would consider himself well. Weighed Jan. 1st 9 st. 4 lb., and on Jan. 26th 9 st. 6 lb. The crepitation that existed over the front of the right lung decidedly smaller, and in the mammary region hardly to be distinguished.

Feb. 17th.—Cough and expectoration rather better; breathing about the same; appetite good, and attends to business more closely than for a long time previously; up to present date has taken cod-liver oil and quinine as he did before commencing baths. All internal medicines to be now omitted.

April 21st.—Health in every respect improved; cough and expectoration very slight; some dyspnoea on strong exertion, but "nothing like what it was;" lives in Long-lane, Smithfield, and now walks to and from the bath (about six miles) without inconvenience; could not have attempted this for a long time previous to taking baths; the dulness on percussion over right apex seems less; crepitation less marked.

June 11th.—Breathing greatly improved; cough has lately been rather troublesome before breakfast. Sent to Dr. George Johnson, who kindly examined the patient, and made the following note: "Slight dulness; feeble respiration and crackling at right apex; harsh breathing at left apex."

25th.—Continues very well; removed to Bethnal-green-road a month ago; walked twelve miles on one day this week without trouble; has taken not less than fifty baths in all. After careful examination could detect no crepitation in the right lung; in the infra-clavicular space slight crumpling sound and a sonorous râle; dulness on percussion hardly appreciable.

Sept. 26th.—In consequence of his improved health has taken no baths except two for three months; one last week, and one the week before. Took them as he was not so well as usual. Has on the whole gone on very favourably. Physical signs the same as on June 25th. Seen to-day by Dr. G. Johnson, who made the following note: "Slight dulness on percussion; diminished expansion and feeble respiration at right apex; no moist sound; respiration at left apex harsh, almost tubular, with prolonged expiration; face still pale."

Oct. 20th.—Had bath on day he last saw me; none since. About a month ago began to make the bodies of hats, in which process ammonia is evolved. On account of his health has not worked at this branch of his trade since 1851. At present does full work. Can walk any reasonable distance, but ascending tries him. Cough troublesome at times. In all other respects doing well. Physical signs: No crepitation at right infra-clavicular region, but a low and peculiar rumbling sound. To resume the baths.

Dec. 2nd.—Baths twice a week regularly since last note. Breathing and cough considerably improved. Says his general health is good. Physical signs unchanged. Showed me a swelling on left side of chest, about three inches below nipple, which he noticed for the first time yesterday. It could scarcely be called sore, and was not painful. Said he did not feel at all weak. Advised him to apply a poultice, and to see me again if it did not soon improve.

7th.—I was sent for in haste to visit him, but he had expired before my arrival. His wife told me that from the time of my last seeing him he had become gradually weaker until the debility was excessive. The swelling continued almost painless, although it had increased considerably in size. He had taken nothing but beef-tea to support him, as a physician formerly consulted had advised him never to take stimulants of any kind. His wife added that he had been of late greatly depressed in mind by business affairs. There was no increase of cough or other chest symptoms. At eight o'clock this morning he managed to dress and get downstairs; had some tea; returned to bed much exhausted, and died calmly about ten o'clock.

*Examination of the body, eighteen hours after death.*—Body in very good condition; sub-clavicular spaces well filled. Three inches below the left nipple was an anthrax two inches in diameter, having a very dark appearance, and on its surface several points of ulceration. Some elevated dark spots were scattered about on the surrounding healthy skin. The cellular tissue involved in the anthrax was in a sloughy condition. On laying open the thorax, a layer of fat at least half an inch thick was found beneath the skin. The heart was larger than natural, and lay more to the right side than usual. All the valves appeared healthy. The right lung was a good deal smaller than the left, which accounted for the position of the heart. There were firm adhesions in various parts, and the apex was so adherent to the opposed surface that a portion of lung-structure was torn through in separating it. Crepitation was impaired, and it had a much more solid feel than is natural; this was remarkably the case at the summit, but there was no appearance of tubercular matter. The left lung was adherent in places, but less so than the right, and it was less crepitant than natural. At the apex there was a tubercular mass about the size of a filbert, and of a cheesy consistence.

*ART. 55.—On the Value of the Hypophosphites of Soda and Lime in the Treatment of Phthisis.*

By Dr. ACHILLE VINTRAS.

(*Lancet*, Sept. 5, 1863.)

Dr. Vintras says that he has often prescribed these salts in phthisis, at the French Dispensary, with very satisfactory results; and he gives four cases in illustration.

CASE 1.—M. P——, aged twelve, was brought to me on July 2nd, 1862. Had been suffering from what the mother called a "bad cold" for two months. Had been in a school at Richmond, and received medical attendance there. Not getting better, she was sent back to her parents. There was incessant cough; much expectoration; had lost her appetite and become very thin; perspired at night.

Examination detected dulness on percussion under the right clavicle for a large space, with gurgling rhonchus; on the left side, respiration short

but healthy. Cough mixture and tonics were ordered, but no improvement took place.

July 10th.—Has brought up a great quantity of most offensive matter, with immediate relief.

13th.—Has coughed up a little blood.

18th.—Has slightly improved, but night perspirations continue. Ordered the citrate of iron and quinine, which she took for a fortnight without apparent benefit.

August 2nd.—Has again vomited a quantity of purulent matter; had been feverish for a day or two. Now commenced the use of the hypophosphite of soda, one grain twice a day, and a teaspoonful of cough mixture night and morning.

10th.—Has improved a little; appetite beginning to return. Discontinued the cough mixture, and increased the dose of the hypophosphite to three grains daily.

20th.—A little dry cough at times; hardly any expectoration; appetite good; night perspirations ceased.

Sept. 11th.—Has again brought up some purulent matter, much less in quantity, though still offensive. The attack came on quite suddenly, without any previous constitutional disturbance.

I persevered with the hypophosphites until February, when the child had become quite fat and healthy-looking. Her cough having ceased, I therefore discontinued all treatment. I have seen her several times since, and her health appears very good.

In this case a continued improvement followed the use of the hypophosphites.

CASE 2.—Mrs. D—, aged thirty-eight, consulted me in December, 1862. She had had four children; nursed the last for thirteen months; was obliged to wean it last October, on account of her bad health. Three months previously she had hæmoptysis for a week; since October the cough had been incessant, the spitting abundant; she perspired at night, and had no sleep; catamenia absent.

Dulness on percussion under the right clavicle, with pain there at times; large crepitant rhonchi. Respiration feeble, but natural, on the left side.

Began the treatment with the hypophosphite of soda on the 21st December; she took four grains a day, and a tablespoonful of cough mixture every four hours.

A week afterwards her appetite had slightly improved, the tongue was cleaner, the cough had diminished, and she could sleep a little at night. Ordered to continue the hypophosphite of soda; the cough mixture to be taken night and morning only.

Jan. 6th, 1863.—Much better; the cough had diminished, the expectoration was easy and less in quantity; the appetite had returned. She had not touched any meat for months, and now she could eat it readily.

At the end of January I saw her again: the improvement continued; she was much stronger; appetite good; tongue clean; she only coughed in the morning; had ceased for some time to take the cough mixture; was going on with the hypophosphite.

In February she called to tell me she was quite well; had no cough at all; slept well; catamenia had returned.

In this case it seems to me that the beneficial action of the hypophosphite is quite evident, as no other medicine was exhibited; and during the whole time she remained under treatment she was following the laborious occupation of school-mistress.

CASE 3.—F. C—, aged twenty-nine, brassfounder; first seen Nov. 29th, 1862; died March 15th, 1863. Had been ill for five months. Began

by spitting a large quantity of blood; night perspiration; troublesome cough; expectoration copious; tongue clean; appetite good; great thirst. Had been confined to bed for three weeks when I first visited him. He was living in great poverty, and unable to provide himself with necessary food. A medical friend who saw him with me did not think he could live a fortnight. I administered the hypophosphites with the view of watching their action in this extreme case. There was great emaciation, flattening of the chest, and a large cavity at the apex of each lung. He was ordered one grain of hypophosphite of soda three times a day, and a cough mixture every four hours. Three days after his first taking the medicine he told me that if he continued to improve daily as much as he had already done he should be able to resume his occupation in a week. Two grains of the hypophosphite were now ordered three times a day, and one grain of quinine before meals twice a day. The improvement continued for a month; he could sit up for several hours in the day, and walked about the room. But he went out without my permission to see a friend and over-tired himself, took to his bed, and never left it, though he lived for two months.

In the above case I think the immediate effect of the phosphatic salt is undeniable, and verifies the statement of Dr. Churchill, that "from the very first day there is frequently observed a remarkable increase of nervous power." Although the *specific* action of the drug may be questioned, yet it must have exercised some powerful influence in stimulating the vital energies of this patient under very adverse circumstances.

CASE 4.—Mrs. T—, aged twenty eight, married, without children, applied to me Nov. 18th, 1862. She had suffered from a cough for nearly two years; had had hæmoptysis several times; night perspirations; no sleep; no appetite; had lost flesh, and become very thin and weak. She had great pain between the shoulders, and had been told by her last medical attendant that she was consumptive.

On examining her chest, there was dulness on percussion under both clavicles, the extent of which was larger on the right side than on the left; the respiration was short and hurried, with subcrepitant rhonchus; she could not take a deep breath. On the left side the breathing was short and harsh, with prolonged expiration. Ordered one grain of the hypophosphite of soda thrice daily, and a cough mixture to allay the irritation of the cough and procure sleep.

Nov. 28th.—Cough less troublesome. She was in better spirits, but still complained of night perspirations and want of sleep; had no appetite for meat. No change in the medicines.

Dec. 8th.—There was some improvement; the cough and expectoration had greatly diminished; she could sleep at night, and only perspired a little towards morning. One grain of quinine twice a day was added to the above treatment.

Jan. 6th, 1863.—Had been to a ball, and fancied she had caught cold; cough much increased; pains in the chest and between the shoulders. Had not taken the medicine very regularly of late. Same treatment without the quinine.

14th.—Better; regaining strength and appetite. To continue the phosphatic salt as before, with one grain of quinine twice a day; cough mixture at night only.

I saw her every week until the 11th of March. The improvement was gradual and steady; she had discontinued the quinine for some time, but had persevered with the hypophosphites; had no cough, no perspiration at night; the catamenia regular.

I called upon her in May: she had no unfavourable symptoms, and expressed herself as being quite well.



In this case the patient had been ill for nearly two years, and under the care of several medical men. She had taken all sorts of medicine without any benefit. The disease was progressing in spite of treatment until she took the hypophosphites. After using this remedy for four months, she felt so much better that she considered herself well. Whether this reappearance of health will last or not is a most important question; but there must be something in a drug which has produced such results.

ART. 56.—*On the Treatment of the Asthmatic Paroxysm by Full Doses of Alcohol.*

By Dr. HYDE SALTER, Assistant-Physician to  
Charing-Cross Hospital, &c.

(*Lancet*, November 14, 1863.)

"In my work on asthma," says Dr. Hyde Salter, "I state that I think the best diet for most asthmatics is one from which any form of alcohol whatever is carefully excluded. I still adhere to this opinion. I still think that, 'unless there is some special reason to the contrary, water is the best accompaniment to an asthmatic's dinner;' that 'in ordinary asthma stimulus of any kind is objectionable;' that 'heavy malt liquors, especially those containing a good deal of carbonic acid gas, as bottled stout and Scotch ale, are of all drinks the worst for asthma.' But since the publication of my book I have seen some cases which have shown me—what I was unacquainted with at that time—the wonderful power that alcohol possesses, in some cases, of abolishing or preventing bronchial spasm. Its efficacy is such as to give it, in my opinion, a high place among the remedies for asthma."

CASE 1.—A Scotch lady, who consulted me in May, 1862. She was fifty-five years of age, and had had her asthma for thirty years. She had been under the care of many physicians, but all the ordinary remedies of asthma had completely failed. The following is a list of some of the things she had tried, and their results, as I have recorded them in the notes I took at the time:—"Nitro-paper—no good; ethers—no good; stramonium, in pills—no good; strong coffee—no good; lobelia—no good; chlorodyne—headache, no relief; emetics—no good." But there was one remedy to which this otherwise uniformly unfavourable verdict did not apply, and that was, whisky. For some time past this lady had been in the habit of taking this stimulus (how long I do not remember), and it had never failed. She took it with hot water, and began with much smaller doses than she ultimately reached; but at the time I saw her she would frequently take three doses, in rapid succession, of an ounce of Scotch whisky each, very little diluted. Her sister told me it produced a very decided effect upon her—I mean, that it decidedly affected her head. It was a great distress to her to have to resort to such a remedy, and in such doses; but, as she said to me, what could she do? She could not go on in such horrible sufferings, knowing that she had immediate relief at her command; and nothing else reached her symptoms, while this never failed, let the paroxysm be as bad as it might. It was merely a question of quantity: if the spasm was very severe, she required more; if it was slight, less would do; but if the

whisky were only pushed far enough the asthma could never withstand it. I saw her three or four times, but with the uniform result of all the remedies that I suggested failing; and she left my care, as she came under it, with whisky the sole remedy of her disease.

CASE 2.—A lady, forty-five years old, who had suffered from asthma fourteen years, and had tried literally *everything*—nitre-paper, emetics, stramonium-smoking, tobacco-smoking, chlorodyne, chloroform, ether, hyoscyamus, ipecacuanha, squill, strong coffee, iodide of potassium, tonics, &c., with hardly any benefit. She was recommended by a lady with whom she was residing to try gin, as it was “very good for asthma,” and she asked my consent, which of course I gave her, and she took a dose—two teaspoonfuls in a wineglass of water. The effect was immediate, and the relief complete. From that time she resorted to it under all circumstances, and always with the same result. No remedy that she had ever tried had produced such effects. The dose gradually increased, and the frequency of taking it also increased, till instead of taking two teaspoonfuls she would take two wineglassfuls;—a smaller dose would not do. Sometimes she would take this as much as three times in the twenty-four hours. I have seen her decidedly under the influence of alcohol. She herself had a great horror of it, and used to try to do without it, but nothing else would give her relief; and, after trying other things in vain, she would be at last compelled to resort to this her disagreeable, but always efficacious, remedy. In the autumn of 1862 I sent her to Malaga, to escape the bronchitis which had nearly killed her the winter before, and she was able there to leave off the gin. But, on returning to this country in May, 1863, she found she was obliged to take to her gin again. She has never found it to do her any harm. It has a strong diuretic effect; but the relief does not depend upon this, as it is immediate, and long before the kidneys begin to act. The gin, she says, produces no exhilaration, but a sort of stupor; and, from this circumstance, she thinks that it acts as a sort of sedative, and relieves the asthma by this property. She always takes it with water as hot as she can bear it. If she took it with cold water, she thinks she might take any quantity, and that it would do her no good; for if she lets it stand till it is cool, and then takes it, it is useless. If, too, she takes it when suffering from bronchitis as well as asthma, or when the asthma is due to cold on the chest, it gives either very imperfect relief, or none whatever.

CASE 3.—A gentleman at the present time under my care. I think I may say without exaggeration that his case is the most severe I have ever witnessed. I have never seen or heard of spasms so violent, or that seemed to threaten so nearly to put life in peril. His most intense spasms he calls “screaming spasms,” from the strangling cries that the want of breath compels him to make. At the time of which I am speaking he lived in the same street with myself, and though his house was half the length of the street from mine, his nurse has often assured me that if the doors had been open I could have heard his screams in my house at night. His case was as much characterized by intractability as severity. I may simply say that *everything* had been tried, and that nothing did him any good worth speaking of. The only thing that gave him any relief was chloroform, and that only lasted as long as he was under its influence; as he emerged from the state of unconsciousness, the spasm returned. All other remedies failed absolutely.

One day his nurse, who had seen benefit derived from hot spirit-and-water in the case of an asthmatic lady on whom she had attended, recommended him to try it. He was at first afraid to do so, thinking it could do him no good, and might possibly do him harm. He, however, took some, and was at once relieved by it. He was so convinced of the relief it gave him, that

when, a few hours after, the difficulty of breathing was coming on again, he again resorted to it, and with a like effect. He took it again and again, each time to meet the spasm, and each time with the same result: the spasm stopped almost as soon as the brandy-and-water was swallowed. It was made very strong and hot—two-thirds brandy, and one-third boiling water. In this way he took a quart of brandy in the first twenty-four hours that he tried it (at least so his nurse afterwards assured me), and went on in that way for two months, during which time he took twelve gallons of brandy. The spasms were so fearful and the relief so complete, that I gave my consent to this treatment, although I was appalled by the quantity of brandy he was taking. Indeed, I think that no prohibition of mine, if I had thought it right to prohibit it, would have been of any avail, so eagerly did the poor man cling to anything that gave him relief. On many occasions, the nurse has told me, he became quite intoxicated, but he was so imperious in his demands for the spirit that she was afraid to refuse him.

For the last five months the "spasms" have left him, but he has instead what he calls a "thickness"—tight constricted breathing—two or three times in the night, and sometimes by day; and this he finds equally relieved by the brandy—equally, but not so instantly relieved: the relief begins at once, but it is often ten minutes or a quarter of an hour before it is complete, and sometimes half an hour before he lies down and goes to sleep. He takes it twice in the night, or three times, but none by day. The quantity now consumed in the twenty-four hours is about five or six ounces. It now never produces any effect on his head. But though he takes it in such reduced quantity, it still must be taken hot and strong; to use his own expression, "the water should be boiling"—as hot as you can get it down: *warm* water is of no use.

He believes himself that the brandy acts by favouring expectoration: but this cannot be, as the relief begins prior to the spitting. I believe the order to be the reverse, and that the expectoration comes in consequence of the relief.

"This is a remedy," says Dr. Hyde Salter, "that one would, and properly, feel great reluctance in commencing. Alcohol is a thing the use of which is much more easily begun than left off. Moreover, it requires to be given in constantly increasing doses. Besides, if given as a remedy for a chronic affection, it has far more likelihood of becoming habitual than if taken for any other reason; for, since the circumstance that requires it constantly recurs, its administration also constantly recurs; and thus that which was given in the first place in small doses, and for a mitigation of suffering, is ultimately taken in excessive quantities, and becomes a necessity of itself. Still, in face of the horrible sufferings of asthma and the inoperativeness of every other remedy, I think we are justified in giving it. I would go so far as to say I do not believe we should be justified in withholding it. Only our patient should be clearly made aware of the tendency of the remedy, and that it is one that can only be administered for a certain time. If the paroxysms are of frequent occurrence, and the dose of alcohol required to subdue them is large, its unlimited continuance would only exchange the uncertainties of asthma for the certainties of kidney or liver disease, or delirium tremens: the common-sense rule of choosing the least of two evils would be enlisted against its use. I admit that this consideration, however striking the effect of the remedy, greatly diminishes its

practical value. Still, in the cases I have related I have been very glad to avail myself of it, and the poor patients themselves have felt thankful that there was at least one remedy on which they could fall back in their extremity. It is a great point gained to stop the paroxysm in any way whatever; and the clinical history of asthma is so capricious that it is always possible that before any remedy has been continued prejudicially long, it may on the one hand cease to be necessary, or on the other may cease to be efficacious.

"What is the theory of the action of this drug in asthma? I think it is the same as that of other stimuli—of strong coffee, mental emotion, &c.; that it acts as what I call, for want of a better term, a 'nervous derivative;' that it puts a stop to the asthmatic state by the establishment of a new nervous condition; it gives a sort of shock or shake-up to the nervous system; in the language of the French semi-official press, it 'profoundly modifies the situation.' We know that an inceptive epileptic fit may be stopped on exactly the same principle. Such a theory has nothing in common with the treatment of acute inflammatory and other diseased conditions by alcoholic stimulation.

"In carrying out this treatment the following rules must be borne in mind:—

"That the alcohol must not be given as a diet—that is, not given as a part of a meal, or sipped gradually.

"That it must be given in quantity sufficient to produce the physiological effects of the drug.

"That the most concentrated forms of alcohol are the best—brandy, whisky, gin; the weaker being inoperative in proportion to their dilution.

"That for some reason or other—probably because it increases the stimulation—it is best given hot; not warm, but *hot*.

"That its continued use requires that the dose should be constantly increased, in order to produce the same effect."

#### ART. 57.—*On the Treatment of Asthma by Static Electricity.*

By Dr. POGGIOLI.

(*Gaz. Hebd. de Méd. et Chir.*, Déc. 4, 1863.)

The author gives details of four cases of asthma in which, after ordinary treatment had failed, a complete and rapid cure was obtained by the use of static electricity.

They were all cases of true asthma—namely, a neurosis of the respiratory apparatus, recurring periodically and in paroxysms. He by no means recommends this method of treatment in cases of asthma, symptomatic of a heart affection, or of emphysema of the lungs.

ART. 58.—*Observations on Hay Fever, or Summer Catarrh.*

By Dr. W. ABBOTTS SMITH, Physician to the Metropolitan Free Hospital, &c.

(*Medical Times and Gazette*, Nov. 20, 1863.)

Dr. Bostock, who is the earliest writer on hay fever (*vide Medico-Chirurgical Transactions* for 1828), and who was himself subject to this disorder for many years, succeeded in tracing its origin to the emanations given off from certain species of Gramineæ, and it has since been shown that hay, although it may have been collected for some weeks, may retain the property upon which hay fever depends sufficiently to admit of its producing the affection in persons who are susceptible to its attacks. In illustration of the occasional occurrence of this disorder in large towns from the latter cause, Dr. Smith adduces the following cases:—

CASE 1.—T. G., a young man of sound constitution, and usually enjoying good health, presented himself amongst the out-patients at the Metropolitan Free Hospital, in June, 1863, in consequence of his suffering from severe catarrhal symptoms, which were accompanied by intense frontal pain, headache, giddiness, lassitude, and prostration of strength. The patient had a harsh, dry cough, and he complained of a disagreeable sensation of itching and irritation in the fauces and trachea. The pulse was weak and rapid, averaging from 85 to 95 pulsations in a minute; the tongue was dry, and partially covered with a white fur; the urinary secretion of a high colour, and very scanty, and the bowels obstinately confined. Learning that the patient was in the employ of a hay salesman, I suspected the real nature of the case, and, on further inquiry, I elicited the important facts that he lived in a small house situated in a yard where large quantities of hay were stored, that the disorder could be traced back to a period at which some loads of very new hay had been brought to the yard from the country, and that the patient's wife was also suffering from symptoms similar to his own. I directed the patient to reside temporarily at a distance from the hay stores, to take a saline aperient draught every morning, and the ethereal tincture of lobelia, in drachm doses, four times a day; subsequently the mixture was replaced by one containing quinine, with an excess of dilute sulphuric acid. The man soon recovered, and the same treatment proved equally efficacious in the case of his wife, who also came under my care.

CASE 2.—Another case of hay fever, which I saw in the past summer, was that of a person residing near Barnet. I adopted the treatment which I had found useful in the preceding case, with great relief to the patient, whom I also directed to suck a small piece of ice occasionally, in order to obviate the thirst and dryness of the throat. The symptoms in this case were unusually severe, the feeling of constriction of the chest being such as to make the patient dread imminent suffocation.

“As a rule,” says Dr. Smith, “I have observed that the worst cases are those in which, like the latter, the patient is affected in consequence of a residence near fields in which the grass is passing through the flowering state. The peculiar aroma of the grass at this period is due to the *Anthoxanthum odoratum* (sweet-scented vernal grass) and the *Holcus odoratus* (sweet-scented soft grass).”

It was ascertained some years since, by M. Vogel, that benzoic acid exists in both of these grasses, and that their aroma is due to its presence. This fact is interesting when considered in connexion with the circumstance, kindly communicated to me by Messrs. Davy, McMurdo, and Co., and corroborated by other practical authorities, that the inhalation of the vapour which accidentally escapes during the process of sublimation of benzoic acid causes considerable irritation of the throat and violent paroxysms of coughing. May not summer catarrh be, in some degree, attributed to the irritative effects of the benzoic acid which is liberated in minute particles from the *Anthoxanthum odoratum* and *Holcus odoratus*, by the agency of the summer heat? In support of this view, it may be stated that the attacks of hay fever are invariably worse during a continuance of hot, dry weather, and are of a milder character in wet weather, and when the temperature is much reduced. This exacerbation of the affection in hot weather also points to local vascular congestion of the naso-pulmonary mucous membrane as a probable predisposing cause of summer catarrh.

"Females are more subject to hay fever than males; and the period of life at which it is most common is from fifteen to forty-five years of age; after this latter age the tendency to an annual return of the affection gradually diminishes. In some instances the disorder occurs in several members of the same family. Dr. Bostock imagined that hay fever was almost entirely confined to the upper classes of society, but subsequent observations have demonstrated that no rank is exempt from its invasion. Its apparent greater prevalence amongst the better classes may be explained by certain accidental circumstances, such as the greater facilities which they have for undergoing medical treatment, so that these cases are more likely to come under professional observation.

"In the treatment of hay fever I have found only a limited degree of benefit to result from the administration of tartarized antimony, digitalis, and ipecacuanha, all of which have, at various times, been recommended. The remedies upon which most reliance can be placed are the ethereal tincture of lobelia, first suggested, I believe, by Mr. Gordon, of Welton, in doses of half-a-drachm to a drachm, every four or six hours, and quinine, combined with dilute sulphuric acid. A saline aperient—sulphate of magnesia being one of the best—should be occasionally given. The employment of ice, of which the patient is to dissolve small pieces in his mouth, at frequent intervals, will be found extremely beneficial in relieving the distressing thirst and dryness of the throat. Bathing in cold water daily, by means either of the shower-bath or the sponge-bath, is very useful in warding off the attacks of hay fever, or in diminishing their severity. The diet should be carefully regulated, and all indigestible food, especially vegetables, should be avoided. The removal of the patient beyond the reach of the cause of the affection greatly facilitates the cure, but in many cases this step would probably not be practicable."

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ART. 59.—*On the Use of Ice in Certain Affections of the Throat.*

By Dr. M. K. TAYLOR, Professor of Medicine in the Iowa State University.

(*Canada Lancet*, January 15, 1864.)

In a letter addressed to one of the Professors of the Chicago Medical College, Dr. Taylor says:—

"I have noticed several paragraphs in the public journals lately, referring to the employment of ice, by some French gentleman, whose name I do not at this moment recollect, in certain affections of the throat. His mode of applying the ice seems to be that of allowing it to be dissolved slowly in the mouth, or of swallowing it, that it might be dissolved in the stomach. I have no doubt of its efficacy in many cases when thus used. There are many instances, however, and particularly in infants, when it is difficult to secure any such favourable results, because of the want of co-operation on the part of the patients.

"A more practicable mode, and one with which I have been very favourably impressed, after some four or five years' trial, is that of its external application to the throat, in nearly all of the local inflammations of that region, not connected with the eruptive fevers.

"I have used it in both inflammatory and spasmodic croup, in diphtheria, tonsillitis, laryngitis, and œdema of the glottis, and I assure you of my belief that we possess no remedy so effective, and at the same time so manageable, as the external application of ice to the larynx, or parts higher up, when thus inflamed. Its powerful sedative impression is observed in a very short time, directly upon the morbid process; while there is a general sedation, seen in the diminished action of the heart, and loss of temperature, with a corresponding modification of febrile excitement, upon the continuance of the application of the remedy.

"In infants I have seen it control the croupy respiration in a very few minutes, and that too when time is of the utmost importance, as in the severe forms of the spasmodic variety. In diphtheria it does not always arrest the exudation of false membrane, but the ice will diminish the amount thrown out, and assuage the local pain and swelling very much. In the earlier stage of tonsillitis it will often arrest the disease, always modifies and lessens the inflammatory action, and prevents, to a very considerable extent, the suppurative process. In some cases, however, when repeated suppurative inflammations have occurred in the tonsils before, it has not always arrested the formation of an abscess—perhaps it might have done so had it been applied in an earlier stage of the disease.

"My mode of application has been to secure a piece of ice, the size of a hen's egg, so shapen as to adapt itself to the form of the neck, upon each side of the larynx, or as near the seat of inflammation as practicable; and for tonsillitis, immediately to the sub-

maxillary region, upon one or both sides, as the case might require. I have generally adjusted the ice by enveloping it in a single thickness of oiled silk so that it could not slip from its proper place, then placing it saddlewise over the larynx. I next envelope the whole neck with several thicknesses of flannel, with the view of preventing the temperature of the surrounding air from contributing to any extent in dissolving it. When the ice seems to be no longer required the moderate application of cold water will prevent too great reaction, and the lighting up anew of the morbid action.

"It does not, or at least I have not relied upon it solely with that view, do away the necessity of other treatment; but I have generally employed such medication as the circumstances seemed to demand for the arrest of the disease, with only this precaution; that antimony and viratrum be administered sparingly, lest too great depression be obtained.

"It will be recollected that the ice lies closely upon the larger vessels of the neck, and that the greater part of all the blood sent to and returning from the brain comes more or less under its influence; and that the sedative effect of the small quantities thus employed is much more marked than when a considerably larger quantity is applied to the whole cerebrum.

"I have no time to prepare notes of cases, if I were so disposed, because of the pressure of my public duties; nor do I consider it particularly necessary to ensure the trial of the remedy by the profession at large. The known sedative action of cold is too well appreciated by the profession to require such demonstration.

"I have not employed it in those anginous affections of the throat connected with scarlatina, lest it might interfere with the appearance of the eruption; though in a desperate case, when other remedies had failed, I should do so, and seek to counteract any unpleasant effect by friction to the surface, and artificial heat to the remote parts. I have seen no unpleasant effects from its use, though I can readily conceive that on young infants, without proper care, its action might be carried too far."

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ART. 60.—*Case of Epiglottitis, or Acute Inflammation and Enlargement of the Epiglottis.*

By Mr. WINDSOR, Senior Surgeon to the Manchester Eye Hospital.

(*British Medical Journal*; and *Dublin Med. Press*, Feb. 17, 1864.)

CASE.—On August 21, 1863, I was requested early in the morning to visit Thomas Shanley, aged about thirty-five, a warp-sizer by trade. He complained of very great difficulty of deglutition, or rather of a total inability of effecting it. He had very little cough, but occasionally hawked up a little mucous secretion. He had not much feverishness, either as to temperature, thirst, or quickened pulse, the last being 88 in a minute. On inspecting the internal fauces, there was not much appearance of inflammation. The tonsils were only slightly enlarged; but, on passing my finger



to ascertain the state of the epiglottis, it was felt to be much enlarged, in the form of a roundish solid ball, apparently filling up the passage from the pharynx to the œsophagus. There was no particular fulness about the external fauces, which had been rubbed with a stimulating liniment, and afterwards poulticed. He had used a gargle of sage-tea and vinegar, and his bowels had been purged by medicine. He had first felt the difficulty of swallowing about two days previously, but had attended to his occupation up to the preceding evening. He could ascribe no cause for his complaint, except, perhaps, taking cold after working amongst steam. I prescribed for him three grains of calomel to be placed upon his tongue every three hours.

He was seen again in the forenoon, and appeared to be much in the same state. This continuing in the afternoon, I then punctured the swollen epiglottis in two or three places with a long needle, broad and flattened towards the extremity, guiding it with one hand, whilst a finger of the other was placed on the part affected. This needle, I may remark, was one which I had used some years previously for passing a seton through an immense bronchocele; and on both occasions it answered the purpose well. I repeated the puncturing late in the evening; and the subsequent bleeding each time, although to no great extent, somewhat relieved him, at least for a time.

22nd.—He had passed a sleepless night. His power of deglutition was little if any better. In other respects he was about the same as yesterday. The tumid epiglottis, which presented to the finger, as above remarked, the sensation of a hard smooth ball, was again freely punctured, and bled moderately.

In the evening he was rather better; had slept awhile during the day; and had been able to swallow a very small quantity of beef-tea. He had now taken five of the calomel powders. The pulse was 88 in the minute; bowels regular; urine scanty, but clear, and not very high coloured; respiration not noisy, nor difficult; and no particular sounds could be heard in the chest.

23rd.—He passed a tolerably good night, hawking up occasionally some discoloured bloody mucus. He could now speak rather better, his speech previously having been an almost inaudible kind of whisper. He had been able this morning to swallow about half a cupful of tea. The swelling of the epiglottis being still considerable, I punctured it again, which was followed, as before, by some bloody hawking. He still continued to take the calomel powders. In the evening I found him downstairs. He had been able during the day to swallow a little egg-milk, some beef-tea, and common tea.

24th.—He passed a rather restless night, principally from headache. The tongue was covered with a whitish fur; his breath exhaled a foetid odour; and his gums were a little tender. The bowels were regular, but he had no appetite. Deglutition was still painful and difficult. He frequently hawked up some discoloured mucus. The swelling of the epiglottis being still considerable, I again punctured it, which was followed, as usual, by some bloody discharge and sensible relief. He was ordered to omit the calomel powders, and to take every two or three hours one tablespoonful of a simple saline mixture.

25th.—He passed a rather uneasy night, but was not worse, although his swallowing was still much obstructed by the enlarged epiglottis. Pulse about 88; bowels regular; tongue less furred; and breath less foetid. The breathing was easy; the percussion-sound over the chest and the respiratory murmur were natural. At his own request the puncturing was repeated. The saline mixture was continued.

26th.—He was in much the same state as he was yesterday. He was prescribed an acidulated weak solution of sulphate of magnesia.

27th.—He had passed a tolerable night, and seemed decidedly better. Pulse 84. His tongue was cleaner, and the fœtor of the breath was scarcely perceived. The bowels were regular. He could now swallow at once a middle-sized cupful of liquid, but he had no appetite for food. He still hawked up frequently some mucus or muco-purulent fluid; and in the night he expectorated a semi-solid substance (probably inspissated mucus), of about the bulk of the last joint of his forefinger. He now articulated audibly, instead of as heretofore, in a sort of whisper. I thought it best to puncture once more the still somewhat enlarged epiglottis, as he had always felt relieved by the bloody discharge following it. The acidulated cathartic mixture was repeated.

28th.—He was now downstairs dressed, having passed a tolerably good night, only disturbed now and then by the expectoration. His deglutition was better; and on examining the epiglottis with my finger, I found that its bulk was diminished, and that it was somewhat resuming its flattened form. A little bloody hawking followed this slight digital examination.

29th.—He was going on favourably, but had no appetite for solid food, living so far chiefly on tea, broth, and egg-milk. I prescribed him the following mixture:—Iodide of potassium, gr. xxv; tincture of orange-peel, tincture of calumba, of each ʒij; water, ʒviiss. Two tablespoonfuls to be taken three times a day.

30th.—The epiglottis was still more reduced in bulk, and was flattening, being restored to nearly its natural size and form. He had a rather free discharge from his throat, of a muco-sanguineous fluid. He could now swallow some bread and milk.

September 7th.—For the last few days he had gradually improved, both as to the local affection and his general health. He had still a little expectoration, or rather hawking up of secretion; but that was not now discoloured or offensive. He still felt a slight impediment to deglutition, but he could take bread and a little animal food. The mixture was continued.

15th.—He was still going on well. His appetite was now tolerably good, and his deglutition easy, although a slight roughness or inequality could be felt on the right half of the epiglottis. In other respects this organ appeared restored to its natural state, both as to form and size. He had no cough nor expectoration; he walked out; and had partly resumed his occupation.

27th.—He continued free from complaint.

*Remarks.*—Although I have detailed perhaps too minutely the history of the above case, I wish to make a few additional remarks on the subject.

As to the treatment adopted—which, indeed, has been my chief motive in drawing up this report—I think it may be justly admitted that, although some beneficial effect may perhaps be ascribed to the agency of the mercurial prescribed in the first instance, and which was discontinued as soon as the gums had become sensibly affected, yet that the principal agent in combating and ultimately subduing the morbid process was the repeated scarification of the affected part. This mode of attempting to relieve the great swelling and congestion of the epiglottis, with its attendant inability of deglutition, was resorted to on the first day of my attendance; and appearing to afford some relief, although only a limited one in the first instance, it was regularly repeated for some days; and each time the patient expressed his assent to it, and his opinion that it had a good effect. It was, therefore, continued until the tumefaction was decidedly diminished, and his ability to swallow satisfactorily restored; from which time there was no interruption to his gradual convalescence.

ART. 61.—*A Case in which the Entire Trachea and Large Bronchi were greatly constricted from Thickening of their Walls, &c.*

By Dr. GIBB and Mr. HOLTHOUSE.

(*Lancet*, January 23, 1864.)

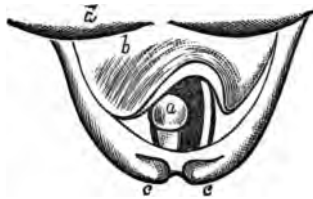
Commenting upon this case, Dr. Gibb says:—

"Although familiar with most of the specimens of laryngeal disease in the London museums, we do not remember having seen any specimen wherein the trachea was restricted from end to end, as in the following case, with extreme hypertrophy of its walls, at the expense of the natural calibre of the tube. We have in mind some four or five instances of isolated points of constriction, such as Dr. Wilks has described, but not of a general nature. Such a circumstance as that about to be described is sufficient to attract attention; but the interest of the case is increased by other peculiarities, which render it at present unique in the annals of medicine. The patient was admitted with a noisy respiration, depending upon smooth shiny growths of the larynx, diagnosed during life with the laryngoscope, and which were supposed to give rise to attacks of dyspnoea. In one of these it was necessary to open the trachea, and, to the dismay of the surgeon, a tube could not be inserted. Here was an unexpected and unlooked-for complication, sufficient to tax the resources of the most skilled. As not the smallest tube could be introduced, nor a catheter borne from the irritation it produced, the patient was left to breathe through the opening made, and succumbed the same night.

"The particulars of the autopsy explain the cause of the difficulty, which was surmised when the tube could not be passed. The remarkable complications present in this case—laryngeal growths, constriction of the entire trachea and both larger bronchi, with great thickening of their walls—will long render it one of the most remarkable that has ever been placed upon record."

CASE.—C. R. M., aged twenty, was admitted into Burdett Ward on December 22nd, 1863, under the care of Dr. Gibb. He had been previously a patient at the Hospital for Diseases of the Chest, Victoria Park, under the care of Dr. Thorowgood, who, recognising the presence of serious laryngeal mischief, sent him to Dr. Gibb. A difficulty of breathing and a stridulous noise had existed for twelve months, with a cough and expectoration. He had lost his voice several times for weeks together, which he attributed to colds. On admission, there was severe dyspnoea, with a stridor or roughness on inspiration, some pain and severe constriction about the larynx, and a feeling of oppression at the upper third of the sternum, where he frequently placed his hand. His aspect was pale and wan; the features were drawn up with an anxious and careworn expression; he looked not more than sixteen, although twenty years old; was much emaciated; and his hands were long and thin, with clubbed fingers. He had a hard cough, with expectoration of a thick viscid mucus tinged with blood; the breathing was laboured, causing a peculiar croaking sound with each inspiration; at

every paroxysm of coughing he had much pain in the lower part of the trachea, and great difficulty in expelling each pellet of mucus. There was harsh breathing in the apices of both lungs, and the breath-sounds generally were remarkably feeble, as if the free entrance of air was somewhat obstructed. The laryngoscope revealed a partially pendent and lopsided epiglottis, with the presence of growths on the right side of the larynx above the true vocal cord. When the larynx was expanded, both of the true cords could be seen, and the voice, although feeble and somewhat hoarse, was quite audible. During forcible expiration these growths were prominent, and appeared to occupy the position of the right false vocal cord, extending forwards to the root of the epiglottis. They were seen by Mr. Gandy (the house-physician), Mr. Holthouse, Mr. Firth, and several of the pupils on various occasions; and the annexed woodcut gives the appearance they presented. He was

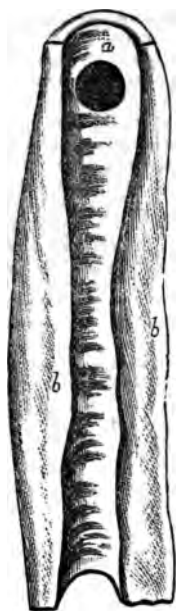


a. The growths occupying the position of the right false vocal cord. The left true vocal cord is seen on the opposite side. b. The lopsided epiglottis. c c. The arytenoid cartilages. d. The back of the tongue.

also examined at the hospital two days before his admission. No growths were seen below the cords, and the symptoms were believed to depend chiefly upon those present in the larynx, but they did not explain the feebleness of the breath-sounds. The dyspnoea was so great at times as to oblige him always to remain in the prone position. He had no dysphagia. There was no history of syphilis, although the disease was suspected from ulceration and purulent secretion of the left nostril. He was ordered a mild pectoral mixture, and iodide of potassium thrice a day; a solution of tannin to the larynx; and nourishing diet.

He improved a little, but the dyspnoea was still urgent, and the cough became distressing. New-year's day Dr. Gibb had appointed for removing the growths, but about two o'clock in the morning he was suddenly seized with extreme dyspnoea; so urgent, indeed, that Mr. Holthouse was sent for, and tracheotomy was performed at four o'clock; but all his efforts to get in a tube failed. A gum-elastic tube, some inches long, and the size of a No. 10 catheter, could be introduced; but it caused the patient so much irritation that it was withdrawn. A portion of the front wall of the trachea was removed, and the patient was left. At the usual hour of the visit, fresh attempts failed to get in anything, and it was clear that the trachea was much constricted. Dr. Gibb observed that the air scarcely entered, and the breathing was quite inaudible over the bifurcation of the trachea and larger bronchi. The patient died at a quarter past nine in the evening, chiefly from asphyxia.

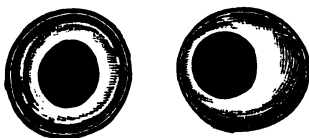
*Autopsy, seventeen hours after death.*—The lungs were engorged with blood, with a few scattered miliary tubercles here and there quite recently deposited; the liver had one or two small white nodules on the surface;



The trachea laid open from behind. *a*. The opening of the operation. *b b*. The walls greatly thickened, and drawn of the natural size.

the genital organs appeared natural, as well as the other viscera. The tongue, larynx, trachea, and bronchi were removed for careful examination. The cesophagus was healthy. The epiglottis, from its root to half-way upwards on either side, was occupied by a number of flattish, fibrinous bodies, which partook of the character of warts; two or three, the size of small peas, smooth and round, were present on the right side of the larynx, involving the false vocal cord, and were those seen during life. The ventricles of the larynx were unobliterated, and the larynx was unobstructed below the vocal cords; the mucous folds everywhere, but especially the aryteno-epiglottic, were very loose. The trachea was greatly thickened, and its tubal diameter much contracted; the anterior walls about its middle were half an inch thick, thinning upwards, but less so downwards. This thickening involved the right bronchus, and slightly the left. About half an inch from its commencement the contraction began, and below the wound its diameter was a quarter of an inch, and this continued nearly all the way to the bifurcation, where even the walls were two lines thick. The diameter of the left bronchus at its commencement was about two lines, and its lining membrane was intensely inflamed, with several ulcerated patches. The rings of the trachea could not be distinguished from within, for the whole of its interior was irregular and uneven from fibrinous deposit.

Since the foregoing account was published it was ascertained from Mr. Meldold, of Victoria Park, that the lad was under his care eighteen months before he went to the Victoria Hospital for the Chest, that he had contracted the poison of glanders from a glandered horse, and that he had had a purulent discharge from the nose and the throat. Repeated attacks of laryngitis ensued, with deposits of lymph, finally ending in permanent dyspnoea.



Horizontal sections of the trachea in different parts of its course.

**ART. 62.—Obstruction of the Pulmonary Artery by Coagula,  
causing Sudden Death.**

By Dr. PITMAN, Physician to St. George's Hospital.

(*Lancet*, January 30, 1864.)

The details of the remarkable and rare cause of sudden death in the following case render it one of much pathological interest:—

**CASE.**—Mary A—, aged twenty-three, was admitted September 30th, 1863, with slight febrile symptoms. She was an hysterical but healthy girl. The symptoms rapidly subsided, and she became convalescent. She was about to leave the hospital recovered, when some stiffness and swelling of the left leg was observed, and she decided to remain a day or two longer. The same day the nurse was called to her at the watercloset, and found her in a fainting state, barely conscious. She died a few minutes afterwards. An inquiry into her history showed that her previous health had been always good until five weeks before admission, when she had complained of pain in the chest. Ten days before she entered the hospital these symptoms had increased so far as to induce her to keep her bed, and she had had several distinct rigors. The severity of the attacks must have subsided before admission, when the skin was cool, and the tongue clean. She had quiet, rather frequent pulse, and the aspect of health. The patient had been treated at first with ammoniated salines, and afterwards was given valerian and aloes. Close questioning of her friends after death proved that she had always enjoyed good health.

**Autopsy, sixteen hours after death.**—The body was plump and well nourished; a great deal of fat was present in the abdominal walls. The legs were slightly cedematous. The brain and its arteries were healthy. The left ventricle of the heart was quite uncontracted; the right was partly contracted. The pulmonary artery was entirely filled with a partly decolorized clot, which was more or less adherent to its walls. This extended from the pulmonary valves to the bifurcation, and thence into both branches, and so on to the smallest branches which could be reached by dissection. In the lung, here and there a small ramification was found which was empty; but the right and left pulmonary artery, as well as the main trunk, were entirely obstructed. The fibrin was hard, and it had the appearance of having been formed for some time. The valves of the heart and the aorta to its end were natural, as also were the carotid and vertebral arteries. Lungs, bronchi, and pleuræ were healthy. The right leg was more obviously cedematous than the left, and its vessels were therefore examined. The deep femoral artery contained a partly bleached coagulum, which commenced with a point at the origin of the vessel, and filled it up as far as it could be followed. The femoral veins of the same limb also contained a clot, which began in a tapering form at the middle third of the thigh, and extended downwards to the ultimate ramifications of the vein. This was black in the centre, partly fibrinous at the edges. It was firm, and fully distended the vessel. Some slight adhesions held together the liver and spleen; these readily broke down, and allowed of the escape of a quantity of creamy matter, which was contained in a cavity between the liver and spleen, formed, however, chiefly at the expense of the latter. Under the microscope no true pus-cells were seen, but there were many nuclei and blood-corpuscles. It was believed that the apparent abscess was the result of the dissolution of a fibrinous block in the spleen. The vagina and cavity of the uterus contained pus.

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ART. 63.—*On Ulcerative Inflammation of the Valves of the Heart as a Cause of Pyæmia.*

By Dr. W. S. KIRKES, Assistant-Physician and Lecturer on Medicine at St. Bartholomew's Hospital.

(*British Medical Journal*, Nov. 25, 1863.)

Among the more formidable evils sometimes resulting from that very common disease, acute rheumatism, a poisoned state of the blood, analogous to pyæmia, and brought about by suppurative or ulcerative inflammation of the cardiac valves, must certainly be included. There are on record numerous instances of death, with all the signs and post-mortem proofs of a purulent or contaminated state of the blood, occurring in the course of rheumatic fever, which clearly demonstrate the truth of this statement. But although the fact is well proved, and although most systematic writers on diseases of the heart allude to the occasional vitiation of the blood by the products of endocardial inflammation, yet the association in question is by no means generally recognised; and when a case of the kind occurs it is apt to perplex and mislead even the most practised observers. The following instance furnishes a striking illustration of this:—

CASE.—J. W., a picture-frame maker, aged twenty-eight, was admitted into St. Bartholomew's Hospital, under the care of Dr. Burrows, on October 15, 1862, suffering from ordinary rheumatic inflammation of several joints of the upper and lower extremities. He was a fairly nourished, dark-complexioned man, with a peculiar anxious and depressed aspect. The face was flushed; the skin hot and perspiring, free from eruption; tongue much coated with moist yellowish-white fur; pulse 80, of good volume; appetite bad; thirst considerable; bowels relaxed from medicine; urine high coloured, with a sediment of urates. A slight systolic murmur was heard at the base of the heart. These, of course, were ordinary symptoms and signs of rheumatism; yet there was a something in the appearance of the man which was unsatisfactory, and suggestive of failing power. This was the more significant since the patient was a very temperate man, in good circumstances, and had never been laid up with any previous illness. The attack began with pain in one hip eight days before admission, and the symptoms had gradually increased. There had been no rigor. The alkaline treatment for rheumatism was adopted, and a pint of beef-tea added to milk and arrowroot diet. He had no sleep the first night of his being in the hospital, but his condition next day (16th) was not materially altered. The bowels had acted five times, the motions being pale and relaxed; he felt sick occasionally. An aromatic draught with twenty minims of tincture of opium was administered, and the alkaline treatment continued.

On the 17th he had another bad night, being frequently disturbed by action of the bowels; the joints were better. On the 18th his bowels were still much relaxed. The tongue was more coated and very red. He had frequent nausea and vomiting of greenish fluid. An aromatic draught with half a drachm of aromatic spirits of ammonia, and ten minims of laudanum, three times a day, was now substituted for his alkaline mixture. Three ounces of brandy, and soda-water, were also ordered. On the 19th the amount of brandy was doubled, on account of the continuance of the

vomiting and diarrhœa. On the 20th the bowels still continuing profusely relaxed, his aspect assumed the character of that of cholera, the eyes and cheeks being deeply sunken, and the bones of the face prominent; his speech was weak, and he appeared much exhausted; the feet and hands were cold; pulse 110, very small and feeble; tongue red and dry. The rheumatic affection appeared to have quite disappeared. He was ordered five grains of sesquicarbonate of ammonia, ten minims of chloric ether, a drachm of compound tincture of cardamoms, five minims of tincture of opium, and a drachm of mucilage, in peppermint water, every four hours.

On the 21st he had suffered profuse diarrhœa during the night; the motions were very offensive, some passed involuntarily; he was frequently sick, vomiting a thin green fluid. His aspect was more indicative of exhaustion; there was a dark areola around the sunken eyes; the feet and hands were cold, the latter rather livid; pulse 90. He was ordered a starch and opium enema, continuance of the draught, and two grains of calomel and a grain of opium at bedtime. On the 22nd he passed a better night; the bowels acted twice only; extremities warm; tongue less red, and inclined to moisture; he still vomited occasionally; thirst great. Although the choleraic symptoms were thus subsiding, a new feature presented itself—viz., considerable swelling of the left parotid gland. On the 23rd the general symptoms continued to improve; the bowels acted only twice; the motions were dark green, with fœcal matter; the urine was clear, of natural colour, slightly acid; the sickness had ceased. The other parotid was now affected, both being much swollen. The draught was continued, and a poppy fomentation ordered for the inflamed parotid.

On the 25th there was no material change; some tincture of bark was added to the mixture. On the 26th he had passed a restless night; the conjunctivæ were injected; the face and hands very red, as if from a diffused eruption, being like that so frequently observed in the reaction after epidemic cholera. The left parotid was more swollen; the swelling of the right had almost disappeared. In other respects his condition was much the same.

On the 28th he had had good sleep from a dose of morphia. The redness of the face had diminished, but there were several irregular bright-red slightly elevated spots on the hands and arms; none on the abdomen. During the next five or six days the patient's general condition remained about the same; occasional diarrhœa and vomiting; the tongue constantly red, and thirst great. The eruption gradually disappeared, and the cuticle of the hands desquamated. The man's appetite improved a little, yet his aspect retained the same haggard sunken character; the left parotid suppurated, and the matter was evacuated. The strangeness of the symptoms, and the continuance of the signs of irritation of the stomach and bowels without obvious cause, led Dr. Burrows to suspect the possibility of some irritant poison being administered by the man's relations. Every precaution was accordingly taken to guard against this occurring.

On November 3rd another change ensued. The man, after a restless night, was found to be completely hemiplegic on the right side; consciousness was obtuse, but not lost. The heart auscultated again to-day, as it frequently was during the progress of the case, yielded no signs of increased mischief. The view now taken of the case was that pyæmia existed—occasioned either by absorption of matter from the suppurating parotid, or, possibly, from suppuration of the left valves of the heart; and that purulent deposit had occurred on the left side of the brain. It was also suggested that possibly some obstruction had occurred in one of the left cerebral arteries. The parotid was punctured again, and much matter let out. During the next



three days the patient gradually sank, no change in the symptoms occurring, and died quietly on the 7th.

The case was full of obscurity and anomalies almost from the commencement. As the rheumatic symptoms subsided, those of choleraic diarrhoea or of irritant poisoning set in, and continued, with occasional abatement, to the end; then unintelligible inflammation and suppuration of the right parotid; then hemiplegia, terminating in death. What was the cause? The autopsy explained it, and cleared up the mystery.

The left middle cerebral artery and its principal branches were found obstructed by firm fibrinous clots. The left corpus striatum was reduced by pale softening almost to the consistence of pulp. This explained the hemiplegia. But what occasioned the arterial obstruction? Numerous granular vegetations were found on the auricular surface of the mitral valve just above its free border, also along the tendinous cords, especially at their junction with the valve. Similar granules, though fewer in number, existed along the festooned borders of the aortic valves, and traces of them were also found on the tricuspid and pulmonary valves.

The mitral valve was especially diseased. Besides the granules, films of soft fibrinous material could readily be scraped from the surface, leaving the endocardium beneath red, rough, and granulated. The tissue of the valve was highly vascular; several minute vessels being clearly visible by the naked eye, still more with the microscope. The vessels were very tortuous, gorged with blood, and several of them could be traced almost to the edge of the valve. The tissue of the valve, especially where most granular, presented, when examined with a lens, an uneven, jagged appearance, very much like that of the surface of an ulcerating wart.

Here there were unmistakable signs of recent acute inflammation, exudation, and slight superficial ulceration of the mitral valve, and commencing similar mischief in the other valves. Part of the granular matter was readily separable after death; and it is reasonable to believe that some had been washed off during life, and that its arrest in the smaller branches of the left middle cerebral artery had, by obstructing the channels there, occasioned obstruction and coagulation in the main channel behind it, and also in the corresponding carotid, which was likewise found occupied by mixed yellow and red coagula. This view was strongly supported by the existence of two wedge-like masses of yellow fibrinous matter in the spleen; and by a similar large mass, surrounded by a dusky red zone, in the cortex of the left kidney. Such masses are now well-known attendants on these cases of blood-vitiation from diseased cardiac valves. Another common attendant on such cases also existed here—namely, a greatly-congested state of the intestinal mucous membrane, with considerable enlargement of the solitary and agminate glands of Peyer. Much of the left parotid gland was found in a state of suppuration. Nothing else noteworthy was discovered in the body, except a few grayish deposits in one lung, near the surface; the pleura over them was vascular, and coated with recent soft lymph.

Surely the pathology of this case is quite clear: ordinary rheumatism in the first instance; then acute ulcerative inflammation of the mitral valve; then contamination of the arterial blood by lymph, pus, and other inflammatory products from the valve; then the signs of general blood-poisoning—namely, febrile disturbance of a

low typhoid form, nausea, vomiting, profuse diarrhœa, and erythematous eruption; then local suppuration in the parotids; lastly, obstruction of the cerebral vessels, with consequent softening of the brain-substance and hemiplegia; all terminating in death, and revealing proofs of blood-poisoning in various parts of the body. Such, manifestly, are the main links and their real sequence in this chain of morbid phenomena; and this interpretation of them is, Dr. Kirkes thinks, of great importance in regard to the whole of this obscure subject.

Until of late these fearful results of acute suppurative endocarditis have not attracted much notice, although particular attention was drawn to the subject by Dr. Kirkes in 1852 (*Med.-Chir. Trans.*, 1852, p. 316). Casual allusions to them, however, in various works, show that their import has not been altogether overlooked. Dr. Watson, for example, after alluding to the separation of fibrinous particles from inflamed valves, as among the accidental results of rheumatic endocarditis, and remarking that the primary effects of such detachment are mechanical, pointedly continues,—“But it is very conceivable that the whole mass of the blood may, in certain cases, be contaminated by the admixture of some of the fluid products of endocardial inflammation.” (*Practice of Physic*, 4th Edition, vol. ii. p. 315.) He then gives the particulars of two fatal cases of rheumatic endocarditis, in which extensive ulceration of the aortic valves was discovered after death; and observes that “with such mischief in rapid progress within the heart, it is easy to see how the blood may be polluted and charged with a new poison in its very fountain.”

Friedreich, too, among other recent writers, specially draws attention to these pyæmic effects of ulcerative endocarditis (Virchow, *Handb. der Path.*, Bd. v. s. 323). His observations confirm what the researches of Rokitsansky (*Handb. der Path. Anat.*, 1st edition) and others, including those of the author (*Med.-Chir. Trans.*, 1852), had already established. Although we thus meet with occasional references to this subject, yet, as already observed, it is only of late that it has been fully worked out. In June, 1862, appeared a masterly essay on the subject, by MM. Charcot and Vulpian (*Gaz. Méd. de Paris*); and this was followed, in October of the same year, by another clever paper by Lanceraux (*ib.*). In these two essays, and in an able paper by Leudet, on Aortitis and Purulent Infection thereby occasioned (*Archiv. Gén. de Médecine*, 1861, p. 575), may be found a summary of nearly all at present known on the subject, together with several illustrative cases, and ample references to modern and former observations on ulcerative endocarditis. It is therein shown that, as in the case just narrated, suppurative and ulcerative inflammation of the valves of the heart may contaminate the blood with inflammatory products, and thus occasion the ordinary signs of pyæmia, such as febrile disturbance of a low typhoid character, occasionally complicated with jaundice, and followed by purulent deposits and death.

It may seem curious that common rheumatic inflammation of the valves of the heart does not produce similar grave results, for the

blood in such cases must be largely contaminated by inflammatory products. No doubt such contamination does exist, and probably explains many of the febrile symptoms in acute rheumatism; but, in order that the more serious pyæmic effects should result, it is probably requisite that ulcerative destruction, with suppuration, should exist. Why such extreme effects should happen in some rheumatic cases and not in others is by no means clear. Recorded cases, however, seem to show that ulcerative destruction is especially liable to occur in those who have been greatly debilitated, who have led intemperate lives, or who are peculiarly cachectic. The mischief in such cases usually runs a very rapid course, and in nearly all cases seems to be fatal.

Generally, this ulcerative inflammation of the cardiac valves seems to occur in association with rheumatism. Not always, however, is this the case. Charcot, Vulpian, and Lanceraux, refer to instances in which no rheumatic or other attendant morbid condition existed to account for the affection. Dr. J. W. Ogle's analyses of cases of ulceration of the cardiac valves is confirmatory of this (*Pathological Transactions*, vol. ix.); and several instances of acute ulcerative destruction of the valves independent of rheumatism have come under Dr. Kirkes' observation.

Usually such cases seem to occur in debilitated cachectic subjects; in those who have been depressed by intemperate habits, exhausted by mental anxiety, or who exhibit signs of imperfect nutrition of their tissues, with commencing fatty degeneration. In such cases the tissue of the valves, whether in consequence of a low inflammatory process or of mere degeneration, seems to undergo a kind of acute atrophy, softens, breaks down, and leaves an ulcerated surface with rough jagged edges, to which fibrinous concretions from the blood adhere. In several instances this form of ulcerative destruction has been met with in pregnancy. Another form of ulceration occurs in connexion with softening of atheromatous material in the substance of the valve, and subsequent destruction of the superjacent endocardial membrane. Death, ensuing rapidly and under very obscure conditions, has not unfrequently been thus brought about. Examples of these several forms of non-rheumatic ulceration of the cardiac valves have fallen under the author's notice, and may furnish the subject of another communication.

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#### ART. 64.—*On the Pathology of Blood and Fever.*

By Dr. WILLIAM ADDISON.

(*British Medical Journal*, March 12, 1864.)

When scarlet-fever is mild—pursuing its normal course—the lips of the patient and the spots of eruption are of a florid scarlet hue. But if fever be severe, these parts assume a dusky aspect. And with the darkening hue of the blood, cerebral disturbances deepen also. But what are the relations of the fever-poison to

the blood-corpuscles? The presumption is that, when the blood is of a florid scarlet, the corpuscles are reacting energetically, expelling the fever-poison; on the contrary, when the hue of the blood is deepening, we say that the reactions of the blood are languid and diminishing.

In fever, with a greater number of respirations in a given time, the amount of carbon discharged by the lungs has been found below the healthy standard. And, "from my analyses," says Simon, "a decided decrease of urea below the physiological mean is a characteristic peculiarity of the urine in continued fever." In fever, then, the natural excretions of blood are diminished. But a new poison—some form of contagious poison—appears.

The argument is that the dark hue of the blood and diminution of the natural excretions (carbon and urea), and the appearance of a new contagious poison, are evidence of disease of the corpuscles of blood, as distinguished from the liquor sanguinis.

In referring phenomena of fever to the blood-corpuscles it is not difficult to perceive the relation of these cellular bodies to æriform poisons. The atmosphere is always charged with terrestrial exhalations, which vary with climate, with the season of the year, and with the day and night. A special reciprocal action takes place in the lungs between corpuscles of blood and elements of air, and it is notorious that æriform miasms give rise to fevers.

On the other hand, local disorders, disorders of diet (gout, scorbutic ulcerations, boils, eruptions, &c.), may be very strongly contrasted with phenomena of fever. The reason is, because the pathology of the liquor sanguinis is different from that of the corpuscles of blood. It would seem that poisons in the liquor sanguinis have a local action. But disorder of the corpuscles of blood is manifested by those general symptoms of distress comprehended under the term fever; because of the great sympathy between corpuscles of blood and elements of the nervous system, as shown in drowning, inhalation of chloroform, &c.

It may be objected to this doctrine, which bases the reproduction of contagious poisons upon disease of the blood-corpuscles, and local disorders without fever upon deterioration of the liquor sanguinis, that it must be impossible to discriminate an illness arising from impurity of the liquor sanguinis from illness occasioned by disorder of the corpuscles of blood; because these two elements are so intimately mingled together that disorder of the one must be immediately communicated to the other. But this objection has been anticipated by the facts already related, and which are observable by everyone—viz., that poisons in the liquor sanguinis act locally; that the brain remains unaffected by a poison in the liquor sanguinis which is severely disturbing some other organ; and physiologists explain these facts by reference to the affinities and resistance of different species of cells.

It may seem a pure assumption to extend to the corpuscles of blood a property of affinity and resistance, but the assumption is corroborated by observation. When blood is examined with a microscope, the corpuscles are seen uniform in size and outline. There

are, however, many fluids which, when added to blood, change the outline and appearance of the corpuscles. But they are not all changed in the same degree. Some are greatly, others only a little altered; and others again are not at all affected, notwithstanding an intimate mixture of the blood with the extraneous liquid.

In the same person blood-corpuscles vary in their resisting power; and, *à fortiori*, we may conclude that the corpuscles of blood in different persons vary in the same respects. Correspondingly, it is well known that a number of persons may breathe at the same time a miasmatic atmosphere, and yet only some of them take the epidemic fever; and of those attacked with fever some have a light, others a severe form of it. Here, we argue, the resistance of the individual is typical of the resistance of the blood-corpuscles.

With reference to disordered sensations in fever, we have already spoken of the intimate sympathy between blood-corpuscles and elements of the brain. The painful feeling of thirst experienced by persons in health when deprived of water is typical of the want of fluid for the blood. The distress occasioned by the least interruption to respiration is typical of the urgent need of the blood-corpuscles for air.

So likewise the rigors, alternate heats and chills, restlessness, headache, and want of sleep, which mark the onset of fever, are typical of commencing disorder in the corpuscles of blood. Moreover, we explain the differences between alcoholic intoxication and the delirium of fever by distinguishing between the two elements of blood. An alcoholic poison in the liquor sanguinis produces a species of delirium and coma; but this passes off in a few hours without fever, whereas the delirium of fever has a period of duration coincident with the generation and expulsion of a morbid poison formed in the blood of the fever-patient by some cellular action.

We are not aware that any philosopher has assigned a reason why the used materials of blood (carbon and urea) are split up into two divisions. Nevertheless, it is quite certain that they are so.

Carbon passes away at once from blood-corpuscles into the air in an invisible state.

Urea or uric acid requires a special secreting organ, the kidney, for its discharge from the liquor sanguinis. And we have already alluded to the pathology of retention of these used materials in the blood.

The same kind of division takes place in contagious poisons. For the breath of the fever-patient exhales an aëriform contagious poison; but the grosser elements of the poison demand some secreting agency for their discharge from the liquor sanguinis. Such are the pustules of small-pox, the poisonous epidermis of scarlet-fever, and other critical secretions from the skin, kidneys, or bowels in other fevers. And if none of the secreting organs be able to cope with the grosser parts of the poison—to eliminate them from the liquor sanguinis—then it is we witness the extraordinary resources of nature in fever.

An unusual action is established somewhere in the neutral

areolar tissue. This is generally a form of inflammation and abscess. An abscess is a species of cellular growth. Pus consists of cells. And the presumption is, that the cells multiply by eliminating morbid elements from the liquor sanguinis—discharging those grosser parts of contagious poisons which, according to our interpretation of phenomena of fever, have been previously discharged from diseased blood-corpuscles as morbid forms of used materials. This is the doctrine of *cell therapeutics*.

It would appear, then, that the contagious poisons of fever behave as do the natural exuviae of blood, inasmuch as they are partly eliminated by the lungs, and partly by cellular action in some natural or preternatural depurating organ; a critical abscess in fever being regarded as a preternatural or temporary depurating organ. The facts are, that the natural exuviae of blood-corpuscles are diminished in severe forms of fever, and a new contagious poison appears. But how do we connect the reproduction of a contagious poison with the blood-corpuscles? To argue this point let us take the example of small-pox fever.

A quantity of matter from one of the pustules of small-pox, so small that it may be borne on the point of a pin, is sufficient, if introduced into the blood of a healthy person, to induce small-pox fever. The question is not as to the diffusion of the virus used; it is the augmentation of it a million-fold in the body of the inoculated person which is to be accounted for. It may be said that the virus is generated in the pustules; but we regard the pustules of small-pox as holding the same relation to the fever-poison as the kidneys do to urea; because the person inoculated has symptoms of fever, therefore some disorder of the blood before the pustules contain any virus. And when the pustules are at their height the fever-symptoms are passing away. Moreover, it is admitted the seat of all contagious fevers is in the blood. The pustules, therefore, must be dismissed from an inquiry which has to deal with elements of blood.

All secretions are products of cellular action. The virus of small-pox is a secretion. The corpuscles of blood are cellular bodies; and the primary action of fever is in the blood. We dismiss, then, the liquor sanguinis, because the question in discussion has reference to some cellular agency. And there remain for examination the colourless and the red corpuscles of blood.

White cells exist in blood, but they are normally too few in number to account for the very large reproduction of the small-pox virus. And in certain states of disease where the number of white blood-cells is enormously increased, the symptoms are not those of fever, nor is any contagious poison generated. On the other hand, red corpuscles exist in blood at all times in countless myriads; and these, in the performance of their natural actions, liberate poisonous compounds which are discharged from the body as carbonic acid and urea, or uric acid.

Such are the facts and considerations which lead to the conclusion that a contagious poison generated in fever is, as it were, the substitute or representative of the natural poisons which are diminished

in fever. If this conclusion be established, it follows that phenomena of fever arise from *disorder of the corpuscles of blood*.

If we review the literature of fever, it will be found that varieties of it are discriminated in various ways: some by the circumstances attending their real or supposed origin, as *marsh-, jail-, camp-, and hospital-fever*; some by the characters of the crisis-action, as *small-pox, scarlet-fever, and measles*.

Some fevers derive their designation from unusual symptoms or appearances, such as *petechial, spotted and yellow fever*. Other fevers, again, have been named from some hypothesis respecting their origin or nature, as *cholera, typhus, and typhoid fever*. Moreover, we read of *traumatic, erysipelutous, pyæmic, phlebitic, and puerperal fever*.

It is not difficult to perceive under these various designations two distinct classes of fever. And these are the distinctions to be made between them:—

When a person in health takes fever from a miasm in the air, the poison is exterior to the person; phenomena of fever constitute the first departure from health, and local disturbances are consequent on the fever. On the other hand, when fever supervenes or is a consequent of some antecedent local disease or anatomical lesion, the poison which disturbs the blood is concocted in the body of the patient himself, at the place of the local lesion; and the patient, before fever appears, is out of health because of the local lesion which precedes and occasions symptoms of fever. Moreover, a person already afflicted with some local anatomical lesion which is the cause of fever, is in a more adverse condition as regards recovery than a person in health taking fever from an exterior poison.

Hence, then, the exanthemata and the continued fever of these latitudes are idiopathic or primary fevers—because derived from an exterior poison; whereas traumatic, pyæmic, phlebitic, puerperal, and other forms of typhoid fever consequent on a prior anatomical lesion, are secondary fevers. Such is the basis upon which we enter on the prognosis and treatment of varieties of fever.

#### ART. 65.—*Cases of Unusual Slowness of the Pulse.*

By Dr. PEACOCK, Physician to St. Thomas's Hospital, &c.

(*Medical Times and Gazette*, Jan. 9 and 16, 1864.)

In this paper Dr. Peacock relates three cases of unusual slowness of pulse, and makes them the occasion for reviewing the state of our knowledge respecting this condition of the circulation. In the first case there were signs of disease of the aortic valves, with occasional fits of a syncopic or epileptic character. In the second case there were no obvious signs of cardiac disease, but there were occasional epileptic or syncopic attacks, the pulse being unusually slow for many years. In the third case the pulse became remarkably slow during convalescence from rheumatic fever; and at the same time there was a murmur at the base of the heart re-

garded as anæmic. Commenting upon these cases and upon the other matters contained in this paper, Dr. Peacock says:—

“I cannot concur with Mr. Mayo that slowness of pulse may be dependent on general exhaustion. Such a state ordinarily is attended with the very opposite character of pulse; under such circumstances, indeed, the left ventricle acts feebly, irritably, and rapidly, and the pulse is quick, small, sharp, and generally feeble. In cases in which the rate of the pulse is unusually low during convalescence from severe disease, it is not during the stage of greatest exhaustion that the rate begins to fall, but during the period of recovery, and the diminution often continues and increases, while the patient is steadily progressing towards cure, taking more food and gaining strength. There is also no just relation as to the degree of prostration between the cases in which the pulse becomes slow and those in which it continues to beat considerably above the healthy standard. Certainly, in the instance which I have related, the rheumatic symptoms were slighter, the prostration less, and the recovery more rapid than in another case in a neighbouring bed, though the pulse of the latter patient long continued to beat upwards of 100 in the minute.

“Closely allied to the class of cases last named are those in which the pulse is slower than in health, and sometimes much slower during the active stages of acute febrile diseases. I have seen cases of fever in which the pulse never exceeded fifty-two, and a case of pneumonia in which it ranged between fifty and sixty, without, in either case, there being any marked cerebral disorder, and in which, unlike the last cases, the pulse rose with the progress towards recovery.

“It will thus be seen that slowness of pulse occurs under very different circumstances: in some cases in which the heart is extensively diseased, and in others where there is no reason to suppose that there is any defect in the structure of the organ. It must also be evident that none of the causes hitherto assigned for the peculiarity—applicable as they are only to particular classes of cases, and not to the whole of those in which it obtains—can be accepted as affording adequate explanations of the occurrence of the condition. As, also, it has been further shown, that when the slowness of pulse is combined with decided disease of the heart the structural changes are of very different characters, it follows that such changes can only be regarded as coincident, and not as essential to the production of the peculiarity, the defect being evidently one of function.

“It would appear, therefore, that the undue slowness of pulse must result either from a want of proper muscular irritability or from a defect in the special nervous endowment of the heart. Whichever view we adopt it will explain the occurrence of the peculiarity, for such defect may, and is indeed very likely, to coexist with any form of structural change in the heart, and yet may occur when the organ is entirely healthy. It would also be a condition very likely to ensue during convalescence from acute febrile diseases; for it is a well-ascertained law of the animal economy that no organ can be the seat of prolonged over-action without its power being



exhausted, and a state of debility or defective action being induced. In the cases in which the pulse is slow during the active stages of febrile diseases, the morbid cause may be supposed to act specifically upon the part in the same way as certain sedatives (I may especially instance aconite and the cinchona alkaloids, given in full and frequently repeated doses) depress the power of the organ, and greatly reduce its rate of pulsation. The condition of the blood probably affects the rate of the pulse in some cases, a slow pulse being not very uncommon in cases of chlorosis and anæmia.

"That this view, which affords a probable solution of the occurrence of slowness of pulse in the different circumstances described, is further supported by the very little effect which, in some of the cases in which the condition supervenes during convalescence from acute diseases, is produced upon the rate by the exhibition of stimulants. Indeed, sometimes the condition is very persistent, continuing after the patient has gained both flesh and strength, and is able to make a considerable amount of muscular exertion. In such cases, indeed, it only subsides under the prolonged use of iron and other remedies which may act directly on the muscular structure or nerves of the heart. The young woman who was recently in St. Thomas's Hospital has at present only a pulse of sixty-four, though she has recovered strength to such an extent as to be able to resume her usual occupations.

"The intermittent pulse bears a very close analogy to the slow pulse, and occurs under very similar circumstances. It may accompany different forms of valvular and other diseases of the heart, yet may be present when the organ is entirely free from disease. The explanation which has been given of the cause of the former condition is equally applicable to the latter."

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#### ART. 66.—*On Substernal Aneurism.*

By Dr. HALLIDAY DOUGLAS, formerly Physician to the Royal Infirmary, Edinburgh.

(*Edinburgh Medical Journal*, Oct. and Nov., 1863.)

In this paper Dr. Douglas relates eleven cases of substernal aneurism, and speaks at some length upon the relation of this disorder to disease of the heart, and upon the subject of diagnosis. With respect to the first of these questions, he concludes:—

"Hypertrophy of the heart is probably in all cases a secondary lesion, and is the result of nature's effort to counterbalance a pre-existing hindrance to the circulation.

"Dilatation of the heart is the natural resolution of local diseases which may, in the first instance, excite hypertrophy. Embarrassment of the circulation, with venosity of the blood, dropsy, &c., usually arises with this consecutive dilatation.

"Valvular disease of the heart often coexists with aneurism of the aorta, especially peripheral aneurism; the sigmoid valves most usually are affected, perhaps from contiguity.

"In such cases the consecutive condition of the heart does not materially differ from that which occurs in cases of simple valvular insufficiency.

"A diseased condition of the arterial coats often exists in conjunction with hypertrophy of the heart, as is commonly seen in cases of apoplexy with disease of the cerebral arteries.

"There is reason to think that the disease of the arterial coats may exist extensively in the system, though the aorta and the arteries at the base of the brain usually present its most advanced effects.

"In this state the aorta is apt to undergo dilatation, constituting usually peripheral aneurism.

"The diseased state of the arteries destroying their elasticity, the circulation is to that extent obstructed, and the left ventricle, under the additional burden, undergoes hypertrophy to compensate the lost tonicity of the arteries.

"In such circumstances hypertrophy arises in a way analogous to that which occurs in cases of disease of the valves, &c., of the heart.

"Consequently, hypertrophy of the heart and peripheral aneurism stand associated together as effects of the same diseased condition of the arteries.

"Consecutive preponderating dilatation may occur in such cases; but the progress to that stage is liable to be hindered by the accidents of hypertrophy, as, for example, of cerebral hæmorrhage, which is promoted by the coexisting disease of the arteries.

"Aneurism of the aorta is often altogether local in its origin, and has no tendency to involve the heart in associated or consecutive disease.

"Such aneurisms are usually saccular, but they may be peripheral, and they suggest the probability of localization of the disease of the coats of the artery.

"Proximity to the heart in such cases does not affect that organ."

With respect to the question of diagnosis, the conclusions at which Dr. Douglas arrives are:—

"The all but invariable importance of dulness of percussion.

"The great diagnostic value of a cavernous intensified character of the cardiac second sound; heard over the seat of disease rather than at the sigmoid valves.

"The rarity and uncertainty of diastolic murmur as a sign of aneurism.

"The importance of pain as a symptom; observing its neuralgic form and its conjoined fixed or local and lancinating character.

"The relation of pain of the shoulder to interference with the phrenic nerve.

"The occasional vomiting of ingesta as a consequence of irritation of both phrenic nerves.

"The occasionally temporary character of laryngeal symptoms.

"The diagnostic value of concurrent inflammation of the lungs.

"The import of difficult expiration, as indicating mechanical obstruction of the trachea."

ART. 67.—*On Subclavian Murmur.*

By Dr. THOMAS PALMER.

*(Lancet, April 2, 1864.)*

The evidence contained in this paper goes to show very conclusively that subclavian murmur is quite consistent with a perfectly healthy condition of the artery or lung.

"It happens," Dr. Palmer says, "that I am medical officer to certain benefit societies, composed exclusively of working men. In examining those presenting themselves for admission, I have for years been struck by the large number of them, seemingly in rude health, who were subjects of subclavian murmur. I was at first uneasy lest this should betoken latent mischief, but soon found that my cases of phthisis, heart and lung disease, were not in excessive proportion. This year I have kept an exact account of the number examined, the age and trade of each, with the proportion of them who were subjects of this sound. These I have put into the form of a table as below. No one was less than seventeen or more than forty-four years of age.

Trade.	No.	Right.	Left.	Both.
Porters ... ..	4	1	—	1
Painters ... ..	19	1	1	2
Photographers ... ..	1	—	—	—
Clerks ... ..	5	—	—	—
Domestic servants ... ..	2	—	—	1
Farriers ... ..	4	—	—	2
Coach, cab, and carmen ... ..	16	2	3	2
Carpenters... ..	9	1	1	1
Gravedigger ... ..	1	—	1	—
Toll-collector ... ..	1	—	1	—
Butchers ... ..	3	—	1	—
Masons, bricklayers, and plasterers ... ..	10	—	1	1
Gold refiner ... ..	1	—	—	—
Shopmen ... ..	6	—	—	—
Shoemakers ... ..	5	—	—	1
Smiths ... ..	7	—	3	—
Labourers ... ..	10	1	—	—
Tailors ... ..	3	—	1	—
Horsekeepers ... ..	4	1	—	—
Gardener ... ..	1	—	—	—
Sawyers ... ..	2	—	—	—
Police ... ..	2	—	—	—
Plumbers, &c. ... ..	6	—	3	1
French-polishers ... ..	2	—	—	1
Hydraulic-engine man ... ..	1	—	—	—
Unknown ... ..	4	—	1	—
<b>Total ... ..</b>	<b>129</b>	<b>7</b>	<b>17</b>	<b>13</b>

"From this table it will be seen that of 129 men of the callings specified, 37, or more than one-fourth, were subjects of this murmur; nevertheless they were all in the enjoyment of perfect health, except for a hernia or some deformity of the extremities perhaps. I shall make no attempt here to speculate as to the effect of different callings in causing subclavian murmur, interesting as the question is, being fully aware that a vastly larger number of cases must be accumulated before such an attempt can be safely made.

"The entire value, in a practical point of view, of subclavian murmur as an index of disease depends upon its causation. If, then, I can show that it may arise from natural causes, and is compatible with the enjoyment of perfect health in a large number of persons, I shall have contributed towards a just estimate of its value as a sign of disease.

"That the murmur is of arterial origin no one will doubt who has read Dr. B. W. Richardson's admirable essay on it in his 'Asclepiad.' I shall therefore take this as proved. The causes of the sound in health I believe to be several; of two at least I have no doubt—viz., (1) pressure exerted on the artery by a subclavian muscle enlarged by any cause; and (2) by diminution of its calibre from below by elevation of the first rib. The former of these causes is espoused by Dr. Richardson in his essay, where, if I understand him aright, he mentions no other origin for the murmur in health; the second is here advocated, as far as I know, for the first time. While admitting freely my belief that many instances of the sound have their origin in pressure by the subclavian muscle, I am of opinion that another series of them is caused by elevation of the first rib; and this view is supported by the following considerations:—  
1. That in many cases the murmur is heard only during inspiration and holding of full breath, and that in others it is greatly increased at those times, though continually present in a less degree. 2. That this vessel rests on the surface of the first rib, which is usually grooved for it, indicating very close proximity; an elevation of this bone, then, by the scalenus anticus or otherwise (as by holding out the arm), will trench upon the calibre of the artery, and give rise to the murmur in conformity with the well-known law; when the rib falls again, the sound falls with it. The minute and constantly occurring irregularities in the distribution of arteries and other parts will naturally and easily account for the occurrence of the murmur in some individuals only. 3. That the murmur is much more frequently found on the left side than on the right, as all observers unite in saying. This circumstance appears to me to be owing to the different courses which the two arteries pursue with reference to the first rib; the left, arising deep in the thorax, passes up behind and hooks over the corresponding rib, and is thus much more likely to feel the effect on its calibre of an upward movement of that bone than the right subclavian, which follows a nearly horizontal course from the innominate.

"That some other cause besides increased volume of the subclavian muscle operates in producing the murmur is evident from the fact of its more frequent occurrence in the *left* artery, whereas the *right* muscle is the strongest worker. Thus, in the above list,

the three smiths presenting the sound all have it on the left side; the two sawyers examined had it not at all, yet this very trade—that of sawing—is specified by the advocates of the subclavian muscle as predisposing; and of nine carpenters, only three presented it. Again, there is no doubt that, in most cases, the action of raising the arm to a right angle with the trunk markedly increases the sound, and this is claimed by the advocates of the muscle as establishing their view; but I submit that it is equally calculated to prove that the elevation of the first rib is the cause, for the clavicle and it are so firmly united by the costo-clavicular and coraco-clavicular ligaments that the former cannot be raised without the latter partaking in the upward movement. The subclavian muscle itself also contributes to move the rib upwards; for, in the case contemplated, it takes action from the more fixed point (the clavicle) to the less fixed one (the rib).

“In those cases where the murmur is heard to be increased during inspiration, or is only then present, a little caution is required in order to discriminate duly between the augmented murmur and the mixture of the natural vesicular with the arterial sound. The risk, too, of recording as subclavian murmur sounds produced by one's own stethoscope must be remembered, but can easily be avoided by searching for the murmur chiefly beneath the centre of the clavicle; it is only in the outer part of its course, where the artery emerges from beneath the bone, that I have been able to produce the sound at will. Were any confirmation wanted of the fact that the murmur is arterial, it would be found in the circumstance that it may often be heard rapidly increasing in intensity while nervousness under a somewhat protracted examination makes the heart beat fast and strongly.

“I cannot but think that a careful consideration of the figures and facts given above will satisfy most that in a working man free from discoverable disorder this murmur is wholly untrustworthy as an evidence of disease. I studiously confine my assertion to the case of working men, because among them my observations have been made. As to the richer classes, medical officers of Life Insurance Companies could make highly interesting observations. Of the value of subclavian murmur as a diagnostic help when associated with other evidences of disease, no one is more conscious than I am; but this forms no part of the object I have proposed to myself in this paper.”

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(D) CONCERNING THE ALIMENTARY SYSTEM.

ART. 68.—*On the Removal of Exuberant Growths of the Tonsils as a Remedy for Imperfect Health in Young Persons.*

By Dr. JAMES YEARSLEY.

(*Medical Circular*, January 6, 1864.)

Dr. Yearsley is still the same warm and confident advocate for the expediency of this operation in these cases, and the following quotation may perhaps help to explain who he is so:—

"Now, the mode in which delicacy of health is brought about by the presence of enlarged tonsils may be thus explained: The diseased glands are situated in what may be called the grand highway of life—the throat—over which every breath of air necessarily becomes contaminated as it passes into the lungs, whilst every morsel of food is rendered unwholesome by being imbued with the unhealthy secretion poured out upon it from the diseased glands on its way to the stomach; hence the patient may be said to be always breathing an impure atmosphere, and eating tainted food. The effect upon the health is precisely similar to that which such conditions of existence—bad food and bad air—produce in young persons in whom there is no enlargement of the tonsils—that is, they become pale and emaciated, weak and flabby, and of stunted growth. But there is yet another reason for the delicacy of health attendant on these cases. The enlarged glands, more especially when held back by adhesion, exercise a certain degree of pressure on the carotid artery as it proceeds along the side of the neck to supply the brain with blood. Any interruption of this kind diminishes the nervous energy of the system generally, and makes its mark upon the general health. Remove the morbid growths, free the arches of the palate, and in a few weeks you will scarcely know your patient to be the same person. I have proved it in hundreds and hundreds of cases. No medicine is necessary."

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ART. 69.—*On Manganese as a Remedy in Diseases of the Stomach.*

By Dr. LEARED, Physician to the Great Northern Hospital, &c.

(*Medical Circular*, January 6, 1864.)

Pain caused by food is a very common functional affection of the stomach, and it affects women more frequently than men. Its ordinary position is at a spot just below the ensiform cartilage, but it may be localized at other points over the region of the stomach. At times it is diffused over a considerable space. When it has continued some time, and especially if its seat is the spot first mentioned, the affected part feels sore on pressure, and this soreness may remain after cessation of pain. In many cases pain extends a good way upwards beneath the sternum, more rarely it is diffused downwards towards the umbilicus, or even below it. It frequently extends towards the right in the track of the duodenum, and it is sometimes experienced in the cardiac region itself. In many cases pain shoots from the part locally affected as from a focus, in various directions through the thorax, frequently to the upper part of the back.

The perception of pain by different individuals is variable, which partly accounts for the varying descriptions of the present affection. By some patients it is described as a dull continuous pain, by others as of a tearing, gnawing, or scraping nature, or like that which might be caused by a tight ligature.

The pain usually comes on from a quarter of an hour to an hour after a meal, but in severe cases is induced by taking even a few morsels of food. Its duration is uncertain, but it usually lasts some hours. There appears to be always a short interval between the time of swallowing the food and the occurrence of pain. A valuable means of diagnosis between it and the pain of ulcer of the stomach in which pain generally happens immediately on swallowing solid food, is thus afforded. But the intensity of pain affords no measure of the gravity of the disease. The pain of cancer or of other organic diseases of the stomach may be less severe than that which is purely of a functional nature. Flatulence with a sense of distension are experienced in some cases, while in others they are entirely absent. Constipation is not a prominent feature of the disease.

The pain and tenderness are seldom connected with gastritis, as their transient nature, as well as the accompanying symptoms, sufficiently prove. They are simply an expression of exalted sensibility of the mucous membrane of the stomach, which becomes intolerant of the natural contact with the food, or else of the gastric juice itself. The facts that the pain does not come on until the food has been some time in the stomach, and that albuminous food—that which requires gastric juice for its reduction—causes suffering, while starchy elements cause it in a less degree, or not at all, support the idea that the gastric juice is its source. Dr. Leared has been led by several circumstances to the belief that the epithelial coating of the gastric mucous membrane is imperfect; that it is either shed too rapidly, or, owing to its imperfect growth, is inadequate for the protection of the delicate surface which it covers. Thus, the state of the tongue whose surface is continuous with that of the stomach, is generally very characteristic of the disease. Owing to a denudation of its epithelial covering, its extremity is very red, and its irritable-looking papillæ stand prominently out. The effect of treatment also proves that inflammation is not concerned in the disease.

Dr. Leared thinks it necessary to describe in some detail the nature of the disease before bringing forward a new remedy for it, because, as there are other painful conditions of the stomach which are not benefited by the same means, its successful use will greatly depend on accuracy of diagnosis. The gastric pain caused by gout, generally connected with an excess of acid, is not removed by the same treatment; the pain which attends organic disease of the stomach is little influenced by it, and the same may be said of the neuralgic pain, which is especially apt to occur when the stomach is empty.

In the treatment of the disorder in question, direct sedatives seldom give more than temporary relief. Opium has the great disadvantage of inducing constipation. Prussic acid, with or without alkalies, so useful in some kinds of stomach pain, is generally futile. But the nitrate of bismuth has long been in deserved repute; more recently it has been almost superseded by its carbonate. These preparations are also open to the objection that they induce constipation. Both these substances are but sparingly soluble in the fluids of the stomach,

and it occurred to the author that their beneficial action may be exerted in a mechanical manner. It seemed possible that the diffusion of an inert powder over the walls of the empty stomach might, as it were, blunt the over-sensitiveness of its mucous membrane. With this view, Dr. Leared tried, in several cases, the effects of silex prepared by precipitation from its solution, a perfectly inert and insoluble powder. The results were not encouraging. Passing then to substances which combine mechanical with a special action, Dr. Leared tried in many cases the saccharated carbonate of iron with little success. A fair trial of the magnetic oxide of iron yielded no better results. All the substances mentioned were given in doses of from ten to twenty grains. In pursuance of the same inquiries the black oxide of manganese, freed from impurities, at length came under trial. Here the results have been unexpectedly satisfactory. After having used it in several hundred cases, both in hospital and private practice, and after an experience of some years, Dr. Leared does not hesitate to pronounce it a most valuable addition to our stomach remedies. It is certainly more efficacious in allaying the hyperæsthetic state of the mucous membrane than bismuth. This has been proved by alternately exhibiting each remedy for a week at a time in severe cases, and carefully noting the results. But, independently of this, manganese has one cardinal advantage—it does not constipate. Assuming them equal in other respects, this alone is enough to stamp its superiority over bismuth, in the use of which we are constantly obliged to tease the gastro-intestinal surface with irritating purgatives. Another advantage not to be overlooked, especially in hospital practice, is this—the purified oxide of manganese can be procured at about one-sixth the price of the preparations of bismuth. Dr. Leared possesses notes of a great number of cases treated by manganese which incontestibly prove its efficacy. Space will not at present allow of these details, but the result of its trial in forty hospital out-patients, men and women, briefly stated, must suffice. The duration of the disease ranged from three weeks (the shortest) to several months and even years. The dose of the manganese was, in almost every instance, ten grains taken three times a day before meals. Alterations in diet could have had little influence in these cases.

After having taken manganese one week,

Pain was quite removed in ...	12	} 28
„ very much relieved in ...	15	
„ relieved in ...	10	
„ unrelieved in ...	3	
<hr/>		40

After having taken manganese two weeks,

Pain was quite removed in ...	4
„ very much relieved in ...	15
„ not so well as first week in ...	1
Patients did not attend in ...	8
<hr/>	
28	



Some of these patients continued taking the medicine for several weeks, and although a few who ceased to attend may possibly have remained unrelieved, no instance of failure came to the author's knowledge.

Dr. Leared was particular in ascertaining the effect on the bowels, and in four cases it is noted that the medicine was thought by the patients to constipate, in three of these only slightly. More extended observations, however, make it plain that it has no constipating effect. In one case, on the other hand, it was stated to have purged.

Manganese is also highly useful in pyrosis, generally removing, first the watery discharge, and afterwards the pain in a short time. In certain irritable states of the stomach it is also of much service. In one remarkable case, in which a woman had been affected with vomiting for many months, after the failure of bismuth, manganese was very successful in quieting the stomach.

The purified oxide of manganese may be given in doses of from five grains to half a drachm, according to the severity of the case. Dr. Leared tried the carbonate of manganese in a few cases with good results as regards pain, but in doses of ten grains it is apt to induce nausea, or even vomiting. The sulphate given in solution also allays pain, but he found that even five grains are still more liable to disagree with the stomach.

The ordinary black oxide of manganese is very impure, and therefore unfit for use. The purified manganese may be obtained from Messrs. Garden and Robbins, 372, Oxford-street, W.

#### ART. 70.—*Causes of Hepatic Diseases in the East Indies.*

By Sir J. RANALD MARTIN, Physician to the Council of India.

(*Lancet*, May 30, 1863.)

Of all the causes which tend to the production of hepatic diseases in the East Indies, peculiar climatic influences, acting on race, are the greatest—climatic influences which do not exist, or which exist in a very minor degree, in other hot countries. That the prevalence of malarious fevers and dysenteries, the absence of wholesome exercises, the confinement in overcrowded and ill-ventilated barracks, along with the abuse of animal food and alcoholic drinks, the undue exposure to heat, cold, damp, and other external causes, give a fearfully additional power and prevalence to attacks of those diseases in India, cannot be denied. But in estimating the extent of such influences in the East, as compared with other warm climates, it must be recollected that the ages, habits of life, duties, and occupations of British soldiers are the same in the West as in the East Indies; yet in the Windward and Leeward command the cases of hepatic diseases are but 2·24 per cent., as compared with 6·2 in Bengal, 7·93 in Bombay, and 8·92 in Madras. The differences in the effects of cli-

mate are here presented as facts, but the essential nature of the difference is not physiologically ascertained. The effects of high temperature and of the rarefaction of the air on respiration and on the hepatic functions Sir Ranald Martin does not here discuss, as they are common to the West as to the East Indies.

If, on the other hand, chronic interstitial inflammation of the liver, or interlobular hepatitis, terminating in cirrhosis, is a common or chief result, in temperate climates, of the abuse of ardent spirits, as stated by Frerichs and by all modern writers, what must be the effects of such habitual abuse under a climate such as that of the East Indies, and under the defective sanitary arrangements existing there, in respect of the European soldier!

"The entrance into the portal vein," says Frerichs, "of colourless corpuscles, of pigment scales, and of various products of metamorphosis, in certain diseases of the spleen, the effects upon the liver of different matters which find their way into the portal blood during digestion, together with many other circumstances affecting the circulation, innervation, and secretion in the portal system, are subjects which afford an ample field for investigation in connexion with this subject."

Again:—"The rapid absorption of spirits from the stomach into the portal vein must, in the first place, give rise to irritation of the liver, which, after a time subsides, the more that the absorbed fluid becomes mixed with the entire mass of the blood, and evaporated through the lungs. After poisoning animals with alcohol, Perez found the largest quantity of alcohol in the liver."

For a hundred years we have fed, clothed, housed, and disciplined our British troops in India on the Prussian model of George the Second's time; and who shall count the united influences and consequences since then of the "fire-water" and of the "fire-shirt"\* on the sickness and mortality of those troops? The "regulation" rum-ration and the "regulation" red jacket—very well in an English winter—are death in tropical climates. The fact is that, chiefly through our own mismanagement, we shall never know how far hepatic diseases in India are to be referred to climate alone, until we shall have weaned the British soldier from the baneful habit of spirit-drinking. Here, it must be admitted, the common-sense of the natives of India has been far in advance of our ever-imitative regulation-mongers.

Of the progressive diminution of hepatitis, to be secured to us by improved habits and conditions of life, and by improved modes of medical treatment of malarious fevers and dysenteries especially, we may form some judgment from the facts stated by Dr. Ewart of the Bengal Army. After presenting a table showing the sickness and mortality from hepatitis during the years from 1812 to 1854, the author says:—"From this table it may be affirmed that during the most modern periods of observation there has been a palpable dimi-

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\* The terms used for more than a hundred years by the natives of India to describe the "regulation" rum-ration and red tunic of the European soldier.

nution of cases of liver disease, as compared to the remote periods, amounting to ninety-six in Bengal, forty-three in Bombay, and to three hundred and eighty in Madras, out of ten thousand of strength. This gratifying result is partly due to the greater temperance of the European army in diet and drink, to their improved condition, and partly to our improved treatment of malarious fevers." The climatic or external causes of hepatitis and its sequelæ are—the peculiar climate of the regions of the East, acting on the stranger European; the absence in India of a temperate zone, and the continued application consequently of an unnatural heat; the counter influences of night chills, and of other alternations in the temperature and humidity of the atmosphere. When these come to be applied to the white man—a subject prepared, as we have seen, by constitution and habit of life for their reception—we perceive how powerful, in the East Indies, these effects must be. European females are far less prone to hepatic disease of every kind than males, and this is mainly owing to their greater temperance, and perhaps in some measure to their sex.

*Prevention.*—A just appreciation of the various causes of hepatic disease in the East will lead us far into a knowledge of the means necessary for their prevention; and the first of these will be found in the avoidance of the peculiar actions of the climate of the hot pestilential plains, the special seats of fever, dysentery, hepatitis, and cholera.

There is no separating the causes affecting European from such as influence native health; and the vicinity of swarming towns, bazaars, and the lines of native troops, has ever been, and must always be, seriously detrimental to the health and morals of the British soldiery, from their climate, their extremely defective sanitary condition, and from their containing such large numbers of natives of the lowest castes and most depraved classes of both sexes, ever ready to minister to the worst propensities of the soldier. In most of our stations throughout India it would be difficult to determine whether they derive more of their injurious influences from climate and defect of proper locality, or from the defiance which they present to all measures of medical police.

Were there no arguments other than those founded on such facts for securing immediate recourse to the pure cool atmosphere of the mountain ranges throughout India, surely they ought to suffice to determine the question in favour of the soldier. And even if over-feeding, the overcrowding in barracks, the fire-water and fire-shirt be his necessary lot, they will be made to lose more than half their venom in the European climates of the hill stations everywhere to be found in the East.\* But it must be remembered that hill stations, even the best, must require culture of the soil and other labours to render them fully effective; indeed, no locality, however favoured, can be exempted from such necessary attentions. In sanitary affairs

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\* The Psalmist prized his mountain at a high value: "He brought them within the borders of his sanctuary, even to his mountain which he purchased with his right hand."

especially, error begets error, and we are not less injured by those we commit than by those we omit or give occasion to. To remedy the enormous evils consequent on the malposition of our European troops we must look alone to the Government—the only moving power in India; for the natives, without such influential promptings, will do nothing, even in the places inhabited by themselves. The removal, therefore, of the British troops to other and better stations than those now generally occupied by them on the plains would seem imperative, as an immediate duty to the army, if we are to arrest the present enormous rates of sickness and mortality in their ranks. Were the stations on the plains as healthy as they are notoriously the reverse, the time, labour, and cost of their sanitary improvement over the vast area of British India would be something inconceivably great; while, obviously, on the hill ranges, the time, labour, and cost required for improvement would be comparatively trifling. Undoubtedly the rum-ration and the red jacket are not in such open and avowed favour as formerly; but fancy in command may any day restore them.

*Conclusions.*—The native Hindoos do not suffer from hepatic diseases in any degree as compared to the European. This must be, first, partly because the native population is acclimated, and proof against the malarious influences so pernicious to the European; and, second, partly because of the extreme comparative temperance of the native population in all that relates to animal food and stimulating drinks.

The inference deducible from the foregoing remarks clearly is, that we should as far as practicable raise the Europeans in India above malarious influences by placing them in the cool mountain ranges; and that we should endeavour suitably to assimilate their condition to that of the native in all that relates to diet, clothing, exercise, &c.

Occupations and amusements for the European soldier are especially needed in hot climates, where during the hot and rainy seasons he is shut up during many months of the year. In that season the soldier is an absolute prisoner, the monotonous parade even being seldom practicable. He wearies in body and mind, and longs for the *medicina mentis*. When anything in this direction has been thought of throughout our foreign possessions, what little has been done has been by halves, by fits and starts, and with very little effect.

A curious problem is beginning its solution in India, the war between the Federal and Confederate States of America tending to force the cultivation of India by European capital and enterprise in an extraordinary degree. This cultivation must tend to diminish malarious influences by purifying the soil, and thus effecting the greatest improvement in climate. Cotton, coffee, and tea are already being cultivated, and will prove of enormous sanitary importance in the future of India. Every square mile of jungle converted to the growth of crops useful to man is *pro tanto* an improvement of the East in a sanitary point of view.

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ART. 71.—*Observations on Gastro-Colic Fistula.*

By Dr. MURCHISON, Assistant-Physician to the Middlesex Hospital, &c.

(*Lancet*, February 27, 1864.)

In a memoir published in 1857, and noticed in a former volume (xxvii. p. 95), Dr. Murchison called attention to the occasional occurrence of fistulous communications between the stomach and the colon; and from an analysis of thirty-three cases, collected from various sources or observed by himself, he endeavoured to throw some light on the pathology and symptoms of this interesting lesion. It was shown that in the great majority of cases the fistula is a secondary result of cancer, or of simple ulcer of the stomach, more commonly of the former. As the disease extends through the coats of the stomach it occasionally excites plastic peritonitis, resulting in intimate adhesion to the colon; and if the ulcerative process be not arrested, it may perforate not only the coats of the stomach, but also those of the colon, without the contents of either viscus escaping into the peritoneal cavity. In twenty-eight out of the thirty-three cases the disease appeared to advance from the stomach to the colon in the manner now described. In only two cases was there reason to believe that the disease had commenced in the colon, and involved the stomach secondarily; while in the remaining three cases the fistula was apparently the result of an abscess, or of softened tubercular matter, at first external to, but ultimately bursting into, both viscera. When a communicating aperture has been formed between the stomach and colon there is no barrier to prevent the contents of the one viscus passing into the other; fecal matter from entering the stomach; crude and undigested food from passing into the colon, and so being voided per anum.

These results are what might have been naturally expected from the new condition of the parts; and they are what we actually find. Fæcal vomiting and the presence of undigested food in the stools, or lenteria, are the characteristic symptoms of gastro-colic fistula. Fæcal vomiting occurs in all cases of gastro-colic fistula where the opening is sufficiently large to permit the regurgitation of fæces into the stomach, and when there is no disease producing great obstruction at the pylorus. When the pylorus is obstructed, there is no fæcal vomiting for two reasons: first, because the stomach becomes overloaded with its own contents, and the vomited matters consist entirely of food; and secondly, because all the food which is not vomited passes at once into the colon, and none enters the small intestines to form fæces, to be regurgitated into the stomach through the fistula. In cases of lenteria depending on gastro-colic fistula, portions of undigested food may be observed in the stools within an hour or two after it is swallowed. This fact admits of demonstration, by administering with the food a pill containing some colouring substance, such as cochineal or indigo. In a case which Dr. Murchison had an opportunity of seeing some years ago in the Edin-

burgh Infirmary, under the care of Dr. W. T. Gairdner, and where there was reason to believe that the patient suffered from gastro-colic fistula, with constriction of the pylorus, pieces of ham were found in the stools two hours after being swallowed, and indigo pills were given with a similar result. In one remarkable case, recorded in his essay, a converse observation was made: fluid enemata thrown into the rectum entered the stomach, and were vomited.

There are several minor symptoms of the lesion under consideration, such as a faecal odour of the breath, great emaciation, a peculiar alteration of the voice, &c., which need not occupy attention at present. Suffice it to say, that a careful study of the cases already on record leads to the conclusion that the occurrence of lenteria and faecal vomiting, following on the symptoms of cancer, or of simple ulcer of the stomach, renders the diagnosis of gastro-colic fistula almost certain.

Since the date of Dr. Murchison's first essay on this subject, a case of gastro-colic fistula, under the care of Dr. W. T. Gairdner, has been published by Mr. de Fabeck, in the *Edinburgh Medical Journal* for July, 1858. The patient was a man aged forty-seven. The primary disease was cancer, probably originating in the stomach. There were two fistulous communications between the stomach and the colon. One of the openings into the colon was about the size of a shilling. Although the pylorus was free from disease and perfectly patent, no faecal vomiting occurred during life; but the absence of this symptom is accounted for by the circumstance that the fistulae were somewhat tortuous, and greatly obstructed by cancerous deposit, especially at the stomachal end, so as to prevent almost entirely the passage of matters either one way or the other. No careful examination of the stools was made during life, but it was noted that for several days before death they consisted of little else than fluid matter, "containing whitish masses exactly like curdled milk," the patient's diet at the time consisting almost entirely of milk. The condition of the parts which prevented faecal vomiting would, no doubt, also prevent the passage of solid food in any quantity from the stomach into the colon. It is probable that a similar condition of the parts existed in those cases of gastro-colic fistula alluded to by Bamberger in which faecal vomiting and lenteria were both absent. For the development of either symptom it is of course necessary that there should be a free communication between the two viscera.

Dr. Habershon, in the second edition of his excellent work on "Diseases of the Abdomen," also records two cases of gastro-colic fistula (pp. 177, 181). In both the primary disease was cancer of the stomach; in both the disease involved the pylorus; and in both the fistula appears to have merely permitted the passage of a probe. It is not surprising, therefore, that there was no faecal vomiting in either case. Still one of the patients is said to have "vomited dark, offensive matter of almost faecal odour." The characters of the stools are not described in either case.

The two following cases possess some additional features of interest:—

**CASE 1.**—Through the kindness of Mr. Morris, of Colchester, I had an opportunity in 1860 of seeing the patient whose case is here given. For the particulars of her history I am indebted to Mr. Morris. The fact of the symptoms of gastro-colic fistula being preceded by pain at the epigastrium, vomiting, and hæmatemesis, taken in connexion with the favourable course of the malady, clearly points to simple ulcer of the stomach as the primary disease. Although no opportunity has been as yet afforded of making an anatomical examination of the parts, the diagnosis of gastro-colic fistula is placed almost beyond doubt by the co-existence of fæcal vomiting with *lienteria*. The remarkable feature of the case is the length of time that the patient has survived the formation of the fistula. Of eleven cases collected in my memoir above referred to, where the duration was ascertained, ten died within eight months after the first symptoms of the fistula; one only surviving for two years and three months. In the case about to be narrated, however, the patient has already survived the formation of the fistula upwards of four years; while the great improvement in the symptoms gives reason to hope that the disease has been undergoing a spontaneous cure. Such a termination of the case, so far as I am aware, would be unique.

Eliza S., aged thirty-three, belongs to a very scrofulous family, and has herself for twenty years been the subject of lateral curvature of the spine, which only ceased to increase about five years ago. The patient is the victim of all sorts of hysterical symptoms, and all her statements must be taken with the reservation necessary in such cases. In the year 1858 she began to suffer from intense pain in the epigastric region, accompanied by vomiting of her food. The pain was always increased by eating, and relieved after vomiting; but she had often a week or ten days of constant retching, accompanied by a peculiar hoarse barking noise. These acts of retching brought up sanguinolent mucus, and occasionally—particularly at the catamenial periods—considerable quantities of blood. After these symptoms had lasted for some months, fæcal vomiting suddenly ensued. This Mr. Morris discredited for some days, until he chanced to see it occur. At the same time, he discovered that portions of undigested food, such as toast and white of egg, were passed from the rectum within ten minutes after they were swallowed, being mixed up in the stools with solid fæces. The patient suffered much from fetid eructations. From Christmas, 1859, until she came under my notice at the end of September, 1860, she passed no stools, with the exception of one or two small dejections of dark, hardened scybala, almost all the fæcal matters being voided by the mouth. The vomited substances contained portions of fæculent matter as large as an almond, and often not unlike an almond in shape. The patient lost flesh, but was far from being greatly emaciated.

The condition now described persisted throughout the year 1861, but at the close of this year she began to pass occasional stools per anum; and during the following year the vomiting was less frequent and less often fæcal, and the fetid eructations were less troublesome. Since the commencement of 1863 the patient has only vomited fæcal matter once or twice, and then in small quantity. Once or twice she has vomited a bloody fluid at the catamenial periods. Before the fæcal vomiting ceased, it was observed that the fæculent masses in the vomited matters gradually became smaller. The patient's general health has greatly improved, so that she is able to earn her livelihood by needlework; and, according to the statement of her friends, she is soon to be married.

**CASE 2.**—For the details of this case I am indebted to Dr. C. R. Bree,

Physician to the Essex and Colchester Hospital, who attended the patient in February, 1860, in consultation with Mr. Joseph Partridge, of Colchester. The case is remarkable on account of the complete occlusion of the colon beyond the site of the fistulous opening, from which resulted fæcal vomiting but no lenteria. The nature of the disease which led to the formation of the fistula is rather obscure. From Dr. Bree's account of the post-mortem examination, it was evidently not cancer. The obstruction of the colon, and the absence of disease in the mucous membrane of the stomach, might seem to indicate that the disease had commenced in the large intestine; but Dr. Bree's impression, from an examination of the parts, was that the constriction of the colon was the "result and not the cause of the fistula." And I am inclined to think that he is right in considering that the disease did not commence in the colon. Indeed, in the absence of cancer or of any history of dysentery, it is difficult to understand how the stricture could have resulted from primary disease of the colon. It is quite conceivable that a simple ulcer of the stomach may have proceeded to perforation, and to the formation of a circumscribed peritoneal abscess, which ultimately burst into the colon; not, however, before the surrounding plastic peritonitis had produced traction and matting together of the intestines and a constriction of the colon. It is also possible that an abscess, with circumscribed peritonitis, may have formed external to both stomach and colon, and after a time burst into both of these viscera. In the twelfth volume of the "Transactions of the Pathological Society" (p. 85) I have recorded a case where a circumscribed cavity in the abdomen communicated by fistulous openings with the colon, duodenum, and gall-bladder, and also with the external surface through the abdominal parietes. Here the colon was very constricted at the site of the opening, although there was reason for believing that the first link in the chain of pathological events was the escape of a gall-stone by ulceration through the fundus of the gall-bladder. There can be little doubt that constriction of the bowel occasionally arises from external adhesions with angular inflection at the point of adhesion.

Mrs. W., aged fifty-three, had complained for about a year of irregularity of the bowels, and occasionally of tenderness at the epigastrium with slight sickness. Latterly she had lost flesh and strength, but still her symptoms were not sufficiently serious to induce her to have recourse to medical advice until about six weeks before her death. At this time she began to suffer from obstinate constipation, for which aperient medicines were employed in vain. When seen by Dr. Bree on the 2nd of February, it was noted that the patient had had no evacuation of the bowels for three weeks. During the same period she had vomited every second or third day a large quantity of fluid of a decidedly fæcal odour. After each attack of vomiting she had experienced relief. She had an anxious pinched expression of countenance, but with the above exceptions she had no very urgent symptoms. She took her food as usual, and got up every day. The pulse was 80, and not weak. The urine was clear and acid; its specific gravity was 1.030, and it contained neither albumen nor bile. On examination there was found a hard, slightly movable, epigastric tumour, situated below and a little to the right side of the xyphoid cartilage. Pressure caused uneasiness in this situation, but not much pain. The abdomen was flat and flaccid, and returned the normal tympanitic sound on percussion everywhere, except in a space extending two or three inches to the right of a line drawn from the xyphoid cartilage to the umbilicus. In an upward direction this dull space was continuous with the hepatic dulness. The patient expressed great disinclination to take medicine, and a pill containing aloes and strychnine having been rejected after a second dose, all further remedies by the mouth were discontinued. An injection of cold water thrown up through a tube



passed thirty-eight inches into the bowel produced no fecal discharge. The treatment was now confined to the administration of jellies and farinaceous food by the mouth, with the injection daily into the bowel of a pint of strong beef-tea (containing the elements of a pound of beef), to which a few drops of laudanum were added. The bowels remained constipated to the last, and not a drop of the nutritious enemata was ever returned. On the 11th of February the patient had another attack of sickness and vomited a large quantity of semi-faecal matter. She gradually sank, and died on the 16th.

On examination of the body after death it was ascertained that the tumour felt during life was formed by the matting together of the intestines at the part in question. The transverse colon was inseparably adherent to the pyloric end of the stomach and to the first portion of the duodenum. The stomach was much dilated and thrown upwards, so as to press upon the left lung. It contained a large quantity of the same kind of fluid fecal matter as the patient had vomited during life. On emptying the stomach there was found, close to the pylorus, an opening as large as a sixpence, forming a direct communication with the interior of the colon. When the finger was passed from the colon into the stomach this opening appeared to be separated from the normal opening into the duodenum merely by a narrow band of membrane. The gastro-colic orifice was surrounded by muscular fibres, so as to have all the appearance of a sphincter. There was no indication of any disease of the mucous membrane of the stomach, and no trace of cancer anywhere, but there was "total occlusion" of the transverse colon immediately beyond the site of the opening.

#### ART. 72.—*On Acute Atrophy of the Liver in Pregnancy.*

By Dr. C. BRAUN.

(*Gaz. Hebd. de Méd. et Chir.*, Février 5, 1864.)

At a meeting of the Obstetrical Society of Berlin, Prof. Virchow stated that he had not yet seen a single fatal case of acute yellow atrophy of the liver in a pregnant woman. He added, however, that affections of the liver are not uncommon in pregnancy, particularly acute parenchymatous hepatitis, without jaundice, after which the liver is found to be voluminous and friable, with enlarged and infiltrated cells.

Dr. Braun's views are at variance with Prof. Virchow's. According to him, jaundice is somewhat unfrequent in pregnancy, and when it does exist it may present one of two forms: either a deep golden-yellow discoloration, without fever and without any head-symptoms, or the tint may be that of sulphur, with accompanying fever and head-symptoms.

The form of jaundice unattended with pyrexia usually ends in abortion or premature delivery; if it has been prolonged, the tissues of the fœtus are of a greenish yellow tint. This form does not immediately depend on pregnancy, but on general causes, and its prognosis and treatment are the same as those of common icterus. The induction of premature labour is not necessary for the sake of the mother, but it is for that of the child.

The other form of jaundice, attended with fever and head-symptoms, is usually the result of acute yellow atrophy of the liver. The head-symptoms manifest themselves by eclampsia and coma, and depend on the accumulation in the blood of the products of the decomposition of the bile, and probably also on uræmia. The invasion of the disease is usually sudden, the prodromata escape observation, the symptoms are severe, and death follows rapidly. Dissection shows a small contracted liver, whilst under the microscope, instead of the normal cells, oil globules and molecular detritus are seen.

Dr. Braun has often noted simultaneously the renal lesions of Bright's disease. Frequently also coagula of effused blood, of the size of the fist, have been seen in the cellular tissue and the fibrous sheaths of the muscles of the thigh, more especially over the large muscles of the chest.

Icterus is not rare after delivery as a consequence of the puerperal process, but fatty degeneration of the liver is oftenest met with in those cases, whilst acute yellow atrophy is very rare.

Of 28,000 pregnant women admitted into the Clinical Hospital of Vienna, 19 only had jaundice, or 1 in 1473; and of these one only had febrile jaundice caused by acute atrophy. In the other cases, the icterus was unattended with fever and head-symptoms, and did not disturb gestation or delivery. With the above are not included those cases in which icterus developed itself after delivery, in the course of puerperal accidents.

After passing in review the chief views entertained on the subject of acute yellow atrophy, Dr. Braun concludes that it consists in acute softening of the liver, and he is inclined to attribute the head-symptoms to uræmia.

### ART. 73.—*Embolism of the Mesenteric Arteries.*

By Dr. GERHARDT.

(*Gaz. Hebd. de Méd. et Chir.*, Avril 1, 1864.)

As the author has taken care to reproduce in a condensed form the only eight cases (with post-mortem) as yet reported, proving the real existence of such embolic obstruction, his essay may be considered a complete monograph on this special point in the history of embolism. His own case, which will now be the ninth of the series of authentic cases, is that of a man, aged forty-three, addicted to excessive drinking of spirituous liquors, who died, in the course of a chronic mitral affection, after a sudden attack of copious hæmatemesis and melæna. At the post-mortem examination there was found, among other alterations of the mitral valve, a grayish coagulum on one of its segments, firmly adherent as far as the free edge of the valve, but there presenting an irregular surface of cleavage. The trunk of the celiac artery and of the superior mesenteric was empty, without coagula, but at the origin of the inferior mesenteric, on the spur which separates it from the aorta,

was a grayish clot, irregular, though somewhat like a haricot bean in shape, and of the same consistence as the one on the mitral valve. From this another coagulum, of recent date, extended into both vessels for about an inch. Another, of similar origin, filled the left coronary artery.

The lower part of the small intestine and the large intestine throughout its whole extent were the seat of an hæmorrhagic infiltration, exactly like that seen in the kidneys, spleen, lungs, or brain after partial obstruction of the afferent vessel. This infiltration, besides, was absent once only in the nine cases on record—namely, in the first, Virchow's case. Twice the hæmorrhage was more abundant in the mesentery than in the intestine itself.

As to the clinical sign of embolism of the mesenteric arteries, the only one is the sudden occurrence of copious gastro-intestinal hæmorrhages in the course of a cardiac affection, attended with fibrinous productions.

#### (E) CONCERNING THE GENITO-URINARY SYSTEM.

##### ART. 74.—*On the Dietetics of Diabetes.*

By DR. EDWARD SMITH, Assistant-Physician to the Hospital for Diseases of the Chest at Brompton.

(*Lancet*, Feb. 6 and April 2 and 16, 1864.)

The remarks upon this subject are taken from one of a series of papers, in which Dr. Smith brings together within a brief compass the opinions which he has been led to entertain, after a very mature and elaborate investigation of the subject, of the dietary most suitable in certain conditions of disease—diabetes, spareness of habit, emaciation, and so forth.

"Wasting," Dr. Smith says, "is the central condition of diabetes, around which all the other symptoms which mark the progress of the disease group themselves."

"This state," he adds, "is not due to defect of ingesta, for, contrary to other states of wasting, the appetite for fluid and solid food is increased; the egesta are also increased, both absolutely and relatively to the ingesta."

"The wasting of the body must be almost exclusively of the soft tissues, and hence must be of fluid (seeing that nearly 80 per cent. of the weight of the body is water) and fat and other products of tissue waste. In this disease the wasting is—

"1st. Of fluid, and that only through the kidneys; for the skin, lungs, and bowel emit rather less than in health.

"2nd. Of sugar, either eaten as sugar ready formed, or produced in the alimentary canal from starch which had not been converted into fat and deposited in the tissues, or into carbonic acid and emitted by the lungs; and in the absence of starch from the animal tissues.

"3rd. Of urea, the chlorides and other salts; for whilst the

quantity in each ounce of urine is lessened, the total amount emitted daily in the state of disease preceding extreme emaciation is increased. When much nitrogenous food is given, urea is further augmented in quantity, and may then be more the product of food than of tissue.

"4th. Of fat, which is used by the function of respiration."

The form of dietary most fitted for the diabetic state is summed up as follows:—

"1. *Fluids*.—To be limited by degrees daily until they shall not exceed five pounds and a half in both fluid and solid food. Of this quantity two to three pints should consist of new or skimmed milk, and one pint, or less, of tea. In the cold season and at night they should always be given when hot. Of all alcohols brandy is the best, and may be given with water only, or added to milk, or beat up with egg and milk and given several times daily. No fluid should be given in greater quantity than half a pint at a time, and when milk is reduced in volume by cooking, the daily quantity of fluid must be made up by an additional supply of the same or other fluid.

"2. *Solids*.—Dr. Prout's combination of eggs and milk (with sharps substituted for bran) is excellent. Four ounces of sharps and 4 oz. of peas, beans, or lentils may be made into bread or pudding, with milk, or into omelettes with eggs and herbs. Eggs and gelatin may be given when starchy food cannot be altogether intermitted. Eggs, gelatin, cheese, gluten bread, meat, fat, and oils may be given as largely as they can be digested. The free use of salad oil should be urged, whether in the cooking of fish or flesh, or in the use of water-cress as a salad, or drunk alone, so that several ounces may, if possible, be consumed daily; but as there are in all persons preferences and dislikes in reference to particular fats, that kind—whether butter, suet, oil, or fat of meat—should be allowed which is the most agreeable. Four ounces of sharps, 3 oz. of wheaten flour, 5 oz. of peas, 1 lb. of meat, 2 oz. of cheese, 2 pints of milk, and 3 eggs will afford more than about 13 oz. of carbon and 1 oz. of nitrogen daily."

#### ART. 75.—*On the Hæmaturia of the Cape of Good Hope.*

By Dr. JOHN HARLEY, Assistant-Physician to King's College Hospital, &c.

(*Proceedings of the Royal Medico-Chirurgical Society*, Jan. 26, 1864.)

In the beginning of October last a gentleman, resident at the Cape, consulted the author about a slight hæmaturia which he had had for some years. After micturition a little blood, never exceeding a teaspoonful, or some dark "veins," appeared with the last half-ounce of urine. The urine itself was never bloody. Sometimes the "veins" would block up the urethra, and cause obstruction for a few minutes. He had an occasional twinge of smart pain in

the loins. These were all the symptoms which ever appeared in connexion with the urinary apparatus. He said great numbers of people of both sexes were affected in precisely the same way in certain parts of the Cape. While awaiting a sample of his urine, Dr. Harley made inquiries amongst his Cape friends and acquaintances, and as the result corroborated his patient's statements, he was now satisfied of the existence of endemic hæmaturia in Uitenhage and Port Elizabeth, and it remained for him to ascertain the cause. In the various samples of urine sent to him by his patient he invariably detected the eggs of an entozoon, and in one specimen he had the good fortune to discover the perfect embryo after its escape from the eggshell, under the form of a minute ciliated animalcula. From its anatomical characters and developmental changes he was led to refer the parasite to the Trematode class of worms, and to the family Distomum. Of the five species of this genus which inhabit man, it had no relation with three. Distomum heterophyes presented some points of resemblance—viz., in the size and conformation of the alimentary canal, if he (Dr. Harley) might be allowed to compare it with an organ he met with in one sample of his own, and which he supposed to be the intestinal canal of the adult parasite. But the animal which it seemed to most nearly resemble, in the outward form of the eggs as well as in the symptoms of the disease it produces, was the Distomum hæmatobium. This parasite, according to Bilharz and Griesinger, was very common in Egypt, and inhabited all parts of the urinary apparatus. But since the parts he had described differed in several respects from the corresponding parts of the hæmatobium, and since, from want of recorded information respecting the corresponding parts of *D. heterophyes*, he could not compare them with these, he was obliged to comprehend them under a new species, which he would call *D. capense*. Having finished his observations of this case, he was strongly persuaded that the hæmaturia of the Cape was due to the parasite, the early stage of whose development he had been able to observe; but still, as its presence in a single case might be nothing more than a coincidence, he felt that more extended observations were needed to prove that this was the constant cause of the local disease in question. With singular good fortune he had the pleasure of an introduction to Dr. Dunstrovill, Surgeon to the Port Elizabeth Infirmary, and who, having practised for twenty-seven years in the Cape of Good Hope—which was one of the two places in which he (Dr. Harley) found the hæmaturia to be endemic—was quite familiar with the disease, the cause of which, however, from want of leisure and means of observation, had never been ascertained. Dr. Dunstrovill's two sons, in common with most other young men, suffered from the disease, but considered themselves to be now free from it. At the author's request, Dr. Dunstrovill kindly supplied him with samples of their urine, and he (Dr. Harley) was at once enabled to demonstrate to Dr. Dunstrovill the existence of the characteristic eggs of the parasite in question in the secretion from both. Having thus demonstrated the existence of the same parasite in three individuals suffering or having suffered from the hæmaturia endemic in

some parts of the Cape, Dr. Harley concluded that the animal was the constant cause of the disease.

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[ ART. 76.—*Case of Albuminuria and Hematuria in which Ergot of Rye was given.*

By Dr. THOROWGOOD, Assistant-Physician to the City of London Hospital for Diseases of the Chest.

(*Medical Circular*, February 17, 1864.)

CASE.—Some time ago I had under observation a man of cachectic aspect, sixty years of age, whose urine was of sp. gr. 1012, loaded with albumen quite red from admixture of blood, and deposited a grumous sediment on standing.

At times pure blood would flow from the urethra before the passage of the urine, and after a few weeks there was a flow of blood after the urine.

He had been sounded, and this gave him severe pain, and was followed by copious bleeding.

At times he had fits of retention, but these not often.

This man had at the hands of myself and others a variety of remedies—for instance: tinctura ferri muriat. potass. ; bitart. and ferri potass. tart. Turpentine, potass. nitrat., et pulv. ipecac. co. Infus. krameris and gallic acid.

I find by my notes that all these remedies had a fair trial in turn, and some of them did a little temporary good. My impression was that this man had some fungoid growth in the bladder causing this free and obstinate bleeding, the fits of retention, and the very acute pain on the introduction of instruments.

Failing to gain any lasting benefit from any of the remedies above named, I gave him pulv. secalis cornut gr. ij, to be taken infused in hot water, thrice daily, as soon as it had cooled.

The effect of this medicine was most striking; it soon checked the hæmorrhage, though this returned when the medicine was suspended; at one time the urine remained, under the influence of the ergot alone, for fourteen days quite free from blood, a thing that had never taken place under the influence of any other medicine.

For a time I tried the pure ergotine in place of the pulv. secalis, but did not find it a superior remedy, though both proved medicines of great value in this troublesome case.

This man had no dropsy, no marked lumbar pain, but a very pale cachectic look. The sp. gr. of the urine ranged from 1012 to 1020.

It is now about twelve months since the patient first came under my observation; at present he suffers much and still passes blood; the only remedies that seem to have done good have been the pulv. secalis and the tinctura ferri sesquichloridi, the first being of much more evident benefit than the last.

I would add, in conclusion, that my belief in a fungoid tumour of the bladder as a cause of the bleeding caused me to feel confidence in prescribing the secale, for this agent seems to me to act powerfully on the small blood-vessels.

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ART. 77.—*On the Simultaneous Employment of Perchloride of Iron and Ergot of Rye in Albuminuria.*

By Dr. SOCQUET and Dr. CHATIN.

(*Medico-Chirurgical Review*, January, 1864.)

Dr. Socquet, in the first instance, and afterwards Dr. Chatin, both Physicians of the Hôtel-Dieu, of Lyons, have employed the perchloride of iron and ergot of rye for the prevention of the loss of albumen in the urine, and the results they have obtained are deserving of notice. The cases observed were some men of bad constitution, weakened by former unfavourable hygienic conditions, such as insufficient food, and dwelling in damp and badly-ventilated localities. The dropsy, in all the cases, at first confined to the face, had successively attacked the limbs and peritoneum. The urine was pale and inodorous, and contained large quantities of albumen, and in one case microscopic examination revealed the presence of the remains of renal epithelium. Immediately on their admission into the hospital these men were subjected to diaphoretics, alkaline diuretics, uva ursi, and digitalis, though without any good result; but at last they took the ergot of rye and perchloride of iron. These medicines were given in progressive doses, beginning with twenty drops of tincture of the perchloride, and fifty centigrammes of ergot of rye. Every two or three days these doses were methodically increased, and carried successively to thirty, forty, fifty, sixty, seventy drops of tincture of the perchloride, and to seventy-five centigrammes, one gramme (about fifteen grains), and three grammes of the ergot. Under this treatment the albumen in the urine rapidly began to diminish; in ten days it disappeared completely, and in ten days afterwards the different dropsical effusions disappeared also. In one of the cases, the treatment having been suspended a little too soon, the albumen again appeared in the urine. In order to judge comparatively of the effects of the perchloride and the ergot, the perchloride was administered alone, when the albumen diminished; but this diminution, although rapid at first, was afterwards very slow. The ergot being added to the prescriptions, accelerated the cure, and four days after its administration there was no more albumen in the urine. M. Perrondin, making some remarks on these cases, observes that the ergot and the perchloride of iron appear to have a beneficial effect on the albuminuria, but that their use constituted the treatment of a symptom rather than that of a disease, and that they are not therefore calculated to supersede the use of other measures intended to remove the original malady.

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**ART. 78.—*On Chronic Hypertrophy of the Bladder, with great Frequency of Micturition.***

**By Mr. BARNARD HOLT, Senior Surgeon to the Westminster Hospital.**

(*Lancet*, December 19, 1863.)

Mr. Holt made the following case the subject of a recent clinical lecture:—

**CASE.**—John D—, aged nineteen, a blacksmith, and a native of Devizes, a strong, muscular young man, was admitted into Northumberland Ward on July 21st, 1863, suffering from a diseased state of his bladder. The patient stated that three years since he fell across a log of wood, which at the time occasioned but little inconvenience; but about a week subsequently, after having taken a long walk, he experienced a very severe aching pain in the course of the urethra, and a constant desire to pass his urine, succeeded in about a week by a purulent discharge. This continued for a month or more unheeded by the patient, at the end of which time he solicited the advice of a neighbouring druggist, who, after examining him, came to the conclusion that he was suffering from gonorrhoea, and prescribed a mixture for him, which appears to have been of the usual character—copaiba, ether, &c. The patient, although knowing himself to be perfectly free from any syphilitic disease, nevertheless took the medicine, which failed to relieve him, and he became rapidly worse, little lumps of what he described as matter and blood being now passed with his urine. The druggist and himself became alarmed, and the patient sought the advice of the parochial surgeon, who, being of the same opinion as the druggist, prescribed accordingly, insisting upon his medicines being persevered with. However, as before, they failed in procuring any relief. He now became an inmate of the Bath Homœopathic Hospital, quitting it in a few weeks, with the usual infinitesimal amount of homœopathic advantage. Continuing still to get worse, he obtained admission into the Bath United General Hospital, and on the 14th of May was received under the care of Mr. Soden, who decided that he was suffering from inflammation of the bladder, and ordered him warm mineral baths every morning, and ten leeches to be applied to the hypogastric region; the latter bled freely, but without in any manner relieving his symptoms. Mr. Soden, suspecting the probability of calculus, sounded him while under chloroform, without, however, detecting any stone, he therefore ordered the bladder to be washed out daily with warm water, to which was added half a drachm of dilute nitric acid. This treatment appears to have had the effect of enabling him to retain his urine longer, but failed altogether to relieve his pain. Mr. Soden a second time examined him while under chloroform, but with a similar result. This state of things continued up to August 14th, 1861, the patient during this period taking medicines prescribed by Mr. Soden. He then left the hospital, very little if at all benefited, and returned to Devizes, where he remained, without receiving any special surgical treatment, from this time up to March 21st, 1862. He then obtained admission into the Bristol Hospital, and was under the care of Mr. Coe, who, after hearing his statement, also examined his bladder, but not finding stone, prescribed medicines to ease his pain, and ordered him warm baths every night. He remained in this institution a period of four months, taking a variety of medicines, without receiving the slightest alleviation. He now returned to his native town, and placed



himself under the care of Mr. Nicholls, who pronounced his case to be stricture, and after some difficulty passed a catheter into his bladder. He remained under this gentleman's care also for four months, with varied results. At the end of this time Mr. Nicholls communicated with Mr. Holt, and obtained his admission into the Westminster Hospital on July 21st, 1863.

Having heard the man's statement, Mr. Holt examined his bladder, first without and subsequently with chloroform, without detecting any foreign body. The bladder was much contracted and roughened, and the prostate was slightly enlarged. The urine contained pus and mucus, with phosphatic crystals, the latter probably dependent on the condition of the bladder. He was compelled to urinate every half-hour, and he experienced great pain afterwards; the bladder, even under chloroform, would only hold two ounces. Mr. Holt prescribed bromide of potassium, liquor potassæ, and chlorodyne, but without relief; and the patient subsequently took, at different times, acetate of potash, liquor potassæ and opium, pareira brava and acid, with a like result. Finding that after a fair trial of various remedies they were of little benefit, Mr. Holt desired that his bladder should be injected every morning with one drachm of the tincture of opium to an ounce of water; but as this gave but transient ease, the sedative solution of opium was substituted for it. This after a few days gave considerable relief, and he was enabled to retain his urine for from three quarters of an hour to an hour, three ounces of urine being now the quantity that was usually passed. This treatment was continued for a month, the bladder still refusing to hold more than three ounces of urine. The injection was directed to be repeated in the evening, but the second passing of the catheter produced so much irritation that after a week's trial the injection was altogether omitted. He still continued to pass three ounces. The iodide of potassium was now prescribed in five-grain doses, with directions to increase the dose every third day; and after the lapse of a fortnight the daily injection of the solution of opium was resumed. The benefit of this treatment was soon apparent, for in a short time the bladder was found to retain three ounces and a half, and occasionally three ounces and seven drachms; the intervals being usually an hour and three quarters, and sometimes two hours and a quarter. This treatment is now being pursued, and apparently with the most satisfactory results.

Commenting clinically upon this case, Mr. Holt said:—"This case affords you an excellent example of the inexpediency of at all times ignoring a patient's statement in reference to the proximate cause of his ailment. If the surgeon under whose care this man first came had carefully inquired into his history, he would have ascertained that the frequency of micturition preceded the discharge, and that the pain the patient complained of was after the bladder had been emptied, and not the ardor urinæ that accompanies an attack of gonorrhœa. The mischief was in the bladder, more especially at its neck; and although the proximate cause was the injury to the urethra, the serious symptoms depended on inflammation of the bladder. But supposing it had been otherwise, and that the inflammation of the bladder had resulted from gonorrhœa, surely the bladder complication required the first attention, and could not be remedied by copaiba or cubebs. The treatment was of course ineffectual, and the poor man continued unrelieved, his frequency of micturition increasing, and the pain becoming more aggravated, the

urine during this period depositing the ordinary quantity of mucus and triple phosphate. Experiencing no relief from allopathy, he eventually tried homœopathy; but as he derived no benefit from globules, he now became an inmate of the Bath Hospital, under the care of Mr. Soden, who at once diagnosed the nature of the case. Unfortunately, however, for the patient, the mischief which by proper treatment might in the first instance have restored the bladder to its normal state, had now resulted in hypertrophy of its coats, limitation of its capacity, and a highly-congested or ulcerated state of its neck, giving rise to those deceptive symptoms which are so characteristic of stone in the bladder; and hence both Mr. Soden, and subsequently Mr. Coe, sounded the patient, without however detecting any foreign body. All the ordinary treatment was from time to time prescribed, but without benefit; and when admitted under my care he was compelled to pass urine every half-hour, the quantity usually being two ounces—occasionally less, but never more. He still complained of great pain after micturition, and the urine contained a large quantity of mucus, pus, triple phosphate crystals, and occasionally blood. The fact of no stone having been previously detected was no evidence that he might not now be suffering from calculus. I therefore sounded him again, first without and subsequently while under the influence of chloroform, but without detecting any foreign body. The first examination gave him great pain. During the time the patient was anæsthesiated I injected his bladder; but although he was perfectly unresisting, I could not force in more than two ounces of tepid water, which, taken in connexion with the limited movement of the sound and the absence of any tumour or irregularity, assured me that he was suffering from hypertrophied bladder. From the extreme sensitiveness of the mucous lining, I was induced to try the effect of large doses of the bromide of potassium, which, after a fair trial, was abandoned as useless. He then took *pareira brava* and acid, still without benefit; and afterwards *chlorodyne* and *liquor potassæ*, and small doses of *copaiba*—all without any beneficial result. I now directed that a drachm of tincture of opium should be injected with an ounce of water every morning, and that he should record the times that he passed urine and the quantity voided each time. After several injections hardly any appreciable benefit could be recognised; the quantity was still about two ounces, but not passed with so much pain. Battley's sedative solution was now substituted for the tincture of opium, and certainly with a marked amelioration to his suffering, and an increase in the quantity of urine, as well as the intervals of passing it. In a few days he could hold his urine varying from eighty to a hundred minutes, the quantity being usually three ounces, but never more. This treatment was continued for a month, and, at the expiration of that time, as the quantity was still three ounces, I directed that the bladder should be injected night and morning; but this plan was not found to answer, as the more frequent passage of the catheter increased the soreness in the urethra, and caused him such an amount of pain as to frustrate the object of the injection. It was, therefore, discon-

tinued for a time, and recourse was had to increasing doses of the iodide of potassium, and eventually to a return of the injection. How far the iodide of potassium may be capable of reducing the chronically thickened bladder I am unprepared to say. We have seen it effect great changes in fibrous enlargement of the mamma and testis, and therefore it may not be quite hypothetical to suppose it capable of exercising a beneficial effect on the bladder; certainly, since the combination of the two remedies, the patient has improved, and I have great hopes that yet further advantage may be gained by their use. The case is one full of interest. There is very little written upon the subject; and I would, therefore, advise your steadily watching it as one from which you may probably derive considerable information."

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(F) CONCERNING THE CUTANEOUS SYSTEM.

ART. 79.—*On a New Method of using Arsenious Acid in the Treatment of Leprosy.*

By Mr. WILLIAM COLLES.

(*Dublin Medical Press*, April 20, 1864.)

Mr. Colles relates three cases, and ends by saying:—

"In addition to these cases I successfully treated a gentleman of European parentage, who had a patch of the tubercular disease on his left arm. I have had several natives suffering from the same disease under my care from a fortnight to a month—periods too limited to effect the cure of more than a patch or two in each case; but the effects of the ointments were invariably beneficial. I must, however, state that I failed in procuring by their use any improvement whatever in a case of leprosy of another description, where the trunk of the body was covered with a number of anæsthetic patches varying in size from half an inch to an inch square. These patches were on a level with but were of a lighter colour than the healthy skin. I may add that the varieties of lighter spots on the skin which prevail extensively amongst the natives of Bengal, and are by them confounded under the term leprosy, are so numerous that I found it impossible to classify them."

The cases are as follows:—

CASE 1.—A few weeks after my arrival at the station I was requested by a wealthy indigo planter to do all in my power to cure a Bengalee, who for sixteen years had been his cashkeeper, but whom he should be forced to discharge, owing to his having three years previously been attacked with leprosy, the symptoms of which so increased in severity that he had latterly completely lost caste, and was shunned as unclean and a pariah by the other natives who held respectable appointments in the indigo factories.

This man, aged about forty, and slightly built, presented symptoms which evidently proved he was suffering from elephantiasis tuberculosa, as described in Mr. Erasmus Wilson's work on "Diseases of the Skin." On his forehead, above the left eyebrow, the integument, to the extent of five or six square inches, was raised about half an inch above the level of the sound

skin; its surface, of a darker colour, was greasy, shining, and tuberculated with rounded elevations, varying from a quarter to half an inch in diameter. Its pores were unusually distinct, and appeared like the skin of an orange. The entire of this portion of integument, and the others I shall have occasion to mention, were completely anæsthetic. Diseased patches were also on the cheeks and parts of the corresponding alæ of the nose; both of the ears, more particularly the lobes, were considerably enlarged—a very common symptom of the disease. There was a large patch on both of the arms and of the thighs, and one on the right side of the chest, where the nipple was double the diameter of the left. The diseased portions of the cheeks presented exactly the same appearance as the forehead, but were elevated only a quarter of an inch above the healthy surface. The patches on the trunk and extremities were raised but from one-tenth to one-eighth of an inch, and were scarcely at all tuberculated.

At the time I first saw this case I had no knowledge of leprosy whatever, nor had I any book to guide me in its treatment except a short article in No. VIII. of the "Indian Annals of Medical Science," where Dr. F. J. Mouatt recommends the use of a native remedy, oil of chalmooogra, which was objectionable from the slowness of its action, as the Bengalese become impatient and dissatisfied unless an early and marked improvement be effected in their diseases. On this account I determined to confine my operations in the first instance exclusively to the local treatment of the thickened integument on the forehead, and directed an ointment composed of ten grains of arsenious acid and an ounce of simple cerate to be smeared on its surface every night and morning. This process having been carried on for about a week without producing any perceptible alteration, I ventured to double the quantity of arsenic in the ointment, and by persevering in its use for another fortnight, it gave rise to a crop of pustules very similar to but of a smaller size than those produced by the potassio-tartrate of antimony ointment, and the part became slightly softened. To please my patient, however, I was desirous of a more rapid and decided improvement, and to attain this object I determined to apply an ointment, highly vaunted for the cure of bronchocele in the Indian journal already quoted, and composed of fifteen grains of biniodide of mercury and an ounce of simple cerate. I hoped this remedy might exert on hypertrophied skin some of the beneficial effects that resulted from its application over hypertrophied thyroid glands, and the result by far exceeded my most sanguine expectations. The diseased patch, while still covered with the pustular eruption, was smeared gently with the mercurial ointment, and when I saw my patient on the following morning its surface was covered with large vesications; and, although not much inflamed, it was painful; it had recovered its sensibility.

But the subsidence of the inflammation and desquamation of the cuticle displayed changes still more striking; the elevated skin had become gradually depressed almost to its original level, and its surface had resumed nearly its natural aspect. Having gained such unexpected advantages from the use of these ointments, I again submitted the same surface to their operation, and had the pleasure of finding, at the close of the second desquamation, that this portion of diseased skin was completely cured. The other patches were successively treated on the same plan, about six square inches of surface being acted on at a time. The arsenical ointment usually produced its characteristic eruption in about a fortnight; whenever it failed to do so, the proportion of arsenic was increased from twenty to thirty grains to the ounce of simple cerate. The biniodide of mercury ointment invariably gave rise to the results already detailed. Several of the patches were only once submitted to their action. By a persistence in these methods during five months the disease was altogether removed, to the intense gratification of

the patient, whose countenance had become so altered, from contentment and the disappearance of the frowning mass above his left eye, that had I not witnessed his treatment it would have been impossible for me to have recognised in him the leper who presented himself before me at our first interview. He returned to his master's residence near Commercilly, where two years subsequently I had the pleasure of seeing him in perfect health, and without the slightest trace of leprosy. I believe that the permanence of his cure depended on an extensive absorption of arsenic into his system, whereby the blood-poison from which the disease originated was destroyed. Twice or thrice during the course of his treatment he complained of a burning pain in the region of his stomach, which ceased on suspending the use of the ointment for five or six days. No medicine whatever was administered internally.

CASE 2.—This patient, aged about forty, had been twenty years suffering from elephantiasis anæsthetica. When I first saw him he was feebly making his way to the Pubna Dispensary, his strength being so much reduced by the long continuance of the disease that he was obliged at every thirty yards' advance to sit down and rest himself. His object in coming to the dispensary was for the relief of inflammation round the ungual phalanx of one of his great toes. The native doctor of the dispensary found the bone loose, removed it, and told me the man was in the last stage of leprosy. On examination I found him weak and emaciated to the lowest degree. The entire skin of his face and forehead was quite anæsthetic. It was darker than natural, extremely thin, as if atrophied, and drawn tightly over the bones of the face; its attenuation being peculiarly marked in the lower eyelids, where its thickness scarcely exceeded that of letter-paper. The lining membrane of the lids was remarkably pale; the mucous membrane of the mouth was drier than natural; the senses of smell and taste were lost; but the sight was perfect. Large portions of the integument on the arms and thighs, and the entire of that investing the fore-arms, hands, legs, and feet, were precisely in the same condition as it was on the face. The lobes of the ears were, on the contrary, hypertrophied. The muscles of the hands were so much wasted that a deep depression occupied the site of the "ball" of each thumb. Although this case appeared utterly hopeless, yet the disease yielded to the ointments used precisely in the same manner as in Case 1. At the close of six months the patient's skin had nearly resumed its original thickness; he had increased considerably in weight, and his muscles had become so much developed that he was enabled to gain a living as a farm labourer. He had partially recovered his taste, smell, and the sensibility of his skin; having regained, as he expressed it, twelve annas (three quarters) in his arms, and eight annas (or one half) in his fore-arms, hands, thighs, legs, and feet. I wished by a repetition of the treatment to complete the cure and thoroughly restore sensitive power; but the patient, being now enabled to earn his bread, would not submit to it. He worked, chiefly at rice cultivation, up to the period of my leaving the country, two years afterwards, without his health or the state of his skin undergoing any change either for better or worse.

CASE 3.—A prisoner in Pubna Gaol, aged about fifty, who for fourteen years had been affected with tubercular leprosy, and had lost several of his toes. He was cured in seven months by the use of the ointments, and I should not have alluded to him so particularly had his disease not been accompanied with the only specimens of large leprosy ulcers that I have met with—sores differing so remarkably from any others that I may be excused for describing them. There were two of them—one, three inches in diameter, on the dorsum; the other (nearly of equal size) on the sole of the right foot. These ulcers presented much the same appearance as if portions

of the skin and flesh of a body recently dead had been eaten away by jockals. They seem to undergo no reparative, and but a very slight destructive process. Their edges, loose and jagged, were not thickened, neither were they harder or softer than the surrounding skin. They, in common with the surfaces of the ulcers, were moist from a thin watery exudation. The only apparent change these ulcers presented was their gradual enlargement from a feeble attempt at gangrene, evinced by the separation from day to day of thin whitish laminæ and shreds of disorganized tissues. They were quite anæsthetic, as was abundantly proved by this individual walking on the grass with the utmost unconcern, while his foot was unprotected by a shoe or covering of any kind. Their vital power must have been very low, for the pressure of the ulcer on the sole of his foot against the ground did not even cause it to bleed. They were dressed with a weak arsenical ointment (four grains of arsenious acid to one ounce of simple cerate), whereby in less than a fortnight they began to granulate, and their cure was afterwards perfected by simple dressing and bandaging. The application of this weaker arsenical ointment to open sores affected the system far more rapidly than the stronger used on unbroken skin, but no inconvenience resulted beyond a slight inflammation of the conjunctivæ and pain in the stomach, both of which readily disappeared on suspending the ointment for a few days.

## ART. 80.—*On Alopecia.*

By MR. GEORGE NAYLER.

(*Proceedings of the Royal Medico-Chirurgical Society, Feb. 23, 1864.*)

*Alopecia circumscripta*, or *areata*, is a disease little noticed by any author except Cazenave, who confounded it with vitiligo of the scalp. It is far more frequent in the female than in the male, the relative proportion being that of seven to four between the two sexes; and it is chiefly observed about the period of puberty. It is a non-contagious disease, and may be represented by almost any number of circular bald patches on the scalp; very protracted in its progress, and tedious to heal. *Alopecia* is often associated with headache, especially in the female, or with some disorder of the catamenia; and in children, with *ascarides* or some gastric irritation. No pain or any previous symptom indicates the disease, which is generally unperceived for some time by the patient. The patch is of ivory smoothness, and ends in a circumference of sound unbroken hair.

When recovery takes place, the new hair is finer and softer than the old, and in some instances perfectly white. (The author had recently seen a patch in a lad of eighteen years where the new hair was quite white.) A microscopical examination shows the hair-bulb to be reduced to a fine point, or the bulb to be slender, and sometimes ending in brush-like filaments. In the stages of recovery the bulb by degrees assumes its normal shape and size, but the hair itself for a long time retains its fineness and lighter colour. *Alopecia* is regarded by most French writers as a parasitic disease, as by Bazin, Harding, and others; but no instance of a parasite has been found by Mr. Startin or the author. Mr. Hutchinson

once detected it; but this may have been a case of *T. tonsurans* or *Pit. versicolor* of the scalp.

The prognosis is favourable, particularly when the disease is recent and the patient of early age or below puberty.

The treatment consists in attention to the general health, and in giving steel. The local treatment is of much importance. The surface affected should be painted from time to time with some blistering fluid, and in the intervals with some form of mercury or sulphur, either as an ointment or a lotion, or a lotion of the *tinctura lyttæ*. In protracted cases mercury and arsenic in *small* doses may be given internally.

In general alopecia the prognosis is less favourable, and when the disease is of long standing no good result can be expected. This form of alopecia differs from alopecia areata only in involving a greater extent of surface.

ART. 81.—*Clinical Remarks and Observations on the Diseases of the Skin said to be Parasitic.*

By Dr. MAURICE CHAUSIT.

(*L'Union Médicale*, Août 22, 1863; and *Medico-Chirurgical Review*, Oct. 1863.)

Dr. Maurice Chausit, in the series of papers he has published on this subject, begins by saying that—"The number of cutaneous affections called parasitic is continually increasing, and is only equalled by the facility with which new cryptogamic spores are discovered." The author, with M. Cazenave, "believes that the parasites observed, supposing they really have been, may exist accidentally, and constitute an abnormal phenomenon, but that they should not be considered as an essential cause of any one of the forms of diseases of the skin.

"The diseases of the skin which successive works of microscopists and physicians have made due to parasitism, in the actual state of the question, are—*favus*, *herpes tonsurans*, *herpes circinatus*, *herpes squamosus*, *herpes iris*, *mentagra*, *vittiligo*, *pityriasis versicolor*, the *ephelides* of pregnant women, *acne punctata*, *acne molluscum*.

"The vegetable parasites which, according to the partisans of this system, play the part of inevitable pathogenic cause, belong to several species of the tribes of the *Torulaceæ* and *Oidieæ*, and are called by the names of *Achorion Schoenleinii*, *Trichophyton tonsurans*, *Microsporon furfur*, and *Microsporon Audouini*, to which they agree to add the *Puccinia favi*, discovered by Dr. Arndtsen, of Christiana, and of whose recent works the French parasitophilists make no mention at all.

"We must not forget to add to this nomenclature of vegetable parasites the new cryptogamic spores discovered by Mr. Hardy in *acne punctata* and in *acne varioliforme*, which we propose to call after the name of their inventor, the *Microsporon Hardii*, until this der-

matologist shall make known the botanical tribe to which they belong.

"The diseases called parasitic are divisible into two classes—the first, A, comprises only one disease, favus, which has, moreover, served as the starting-point of the vegetable theory of certain affections of the skin, and which, to a certain point, explains how the presence of parasites may be seriously discussed and admitted; in the second, B, are arranged all the other diseases in which the existence of a cryptogam can only be made out with the eyes of a strong belief, or the tendency to view as vegetable spores all the rounded bodies which do not present the microscopic characteristics of cerumen, of the globules of pus or of fat.

"The appearance of the favus matter, seen in the field of the microscope, presents, neither altogether nor in its parts, that simplicity of organization which would leave no doubt, and which one has a right to expect before admitting that it is of a vegetable nature.

"The characters of the objects declared to be of a vegetable nature by microscopic inspection become less and less visible as one quits the study of the favus matter; one might even say that in some of the diseases one meets with no vestige whatever of cryptogamic germination."

### AET. 82.—*On a Case of Chromidrosis.*

By Dr. COPPÉE.

(*Gaz. Hebd. de Méd. et Chir.*, Avril 23, 1864.)

On the 26th of October, 1863, Dr. Coppée, in consultation with Dr. Meulemeester, saw at Vosselaere a young person, aged twenty-seven, the daughter of a farmer in easy circumstances, of a lymphatic temperament, and highly nervous organization. The cutaneous surface of her upper and lower eyelids, on both sides, was of a dull, black colour, without any other alteration of the eyelids or eyes. She stated that this discoloration had appeared for the first time about the middle of August, 1861, and lasted six weeks: there was at the same time a black patch over the epigastrium. Since then, the discoloration of the eyelids has shown itself and disappeared five or six different times. It usually lasted three, four, and five days; once only it remained for eleven days.

On the present occasion it showed itself about the middle of May, 1863, and is still persistent now (January 24th, 1864). She cannot tell whether the discoloration gets darker at the menstrual periods. On rubbing the eyelids with a piece of linen well oiled, the colouring matter came away entirely, but within three quarters of an hour, in my own presence, it had reproduced itself.

There has been no other case of the kind known in the neighbourhood, and the patient declares she has never heard of the strange ailment she is labouring under. She has often been visited by Dr.



Meulemeester when she least expected it, and the eyelids have on every occasion been seen discoloured.

Her previous history was a long series of ailments. When eleven years old she had caries of the two big toes; she menstruated for the first time at fourteen, and had at the same period white swelling of the right knee-joint. The joint is now disorganized, with numerous fistulæ leading into it. Between her seventeenth and nineteenth year, there was complete amenorrhœa. She afterwards had aphonia for twenty months; next, amaurosis for nine months, during which time she only lived on apples and unripe fruit, any other kind of food bringing on vomiting. Some time after this she had periodical vomiting of a watery fluid, which, on being stopped by quinine, was replaced by a watery flux from the vagina. *Procidentia uteri*, with slight ante flexion, came next; and at various intervals subsequently she has passed about ten fibrous polypi.

She had all that time frequent hysterical fits, which have within the last few weeks assumed an epileptiform character. She is chlorotic, with a waxy complexion, a small, quick pulse, and a hurried respiration.

Dr. Leroy de Méricourt has lately published a monograph on chromidrosis, based on twenty-eight cases, almost all of them relating to young females whose menstruation was irregular. Hence, a suspicion arose that dysmenorrhœa and chromidrosis were connected. But since then, Dr. Leroy de Méricourt has published two instances of chromidrosis in man. The affection seems to be relatively frequent at Brest. In Belgium, only one case has been published, by Professor Spring (August 14th, 1861), who believes it to have been simulated.

*Report on the above by Drs. Poirier and Ingelo.*

The patient was seen on February 25th. The eyelids were of a bluish black colour, contrasting with the dull whiteness of the rest of the face. The upper lids were discoloured only up to the level of the orbital ridge, whilst the lower lids were completely blackened; and the discolouration, after fading by degrees, disappeared entirely on the cheeks. The appearances were those of ecchymosis of the eyelids; the skin was neither shining, nor greasy, of a pretty uniform tint; with the magnifying glass, however, a few black granulations were seen scattered here and there. There was no puberent substance to be detected on the eyelashes or eyebrows, and these were not agglutinated either.

Friction with a dry piece of white linen did not affect the discolouration in the slightest degree, and only produced dilatation of the pupil on that side. On oiling the piece of linen the black colour was removed as if by magic, and stained the linen of a violet hue. This, when examined afterwards microscopically by Professor Poëlman, was seen to consist of black molecules, and characteristic pigment cells, with a vesicular nucleus.

A piece of oiled paper also removed the black colour, but strange to say, forty-eight hours after, no trace of it remained, although the paper had been folded up several times, wrapped up in another

piece, and kept in a portfolio. The colour of the linen had undergone no alteration.

After the four eyelids had been thoroughly cleansed, a layer of collodion was applied over one of them, but within half an hour (every movement of the girl being strictly watched all the time), the eyelids were of a slaty-black colour, beneath the layer of collodion as well as elsewhere.

In the hypogastric region, a little above the pubis, were two other patches, of the same colour, each of them of the size of a five-franc piece, and with fringed edges. There was such a degree of hyperæsthesia over these patches that no attempt could be made to remove the colour.

According to the patient's statement, the whole abdomen had at one time been discoloured in the same manner. The reappearance of the stains often coincided with the expulsion per vaginam of fibrous polypi.

In conclusion, the reporters consider the case as one of genuine chromidrosis.

### ART. 83.—*On the Scleroma of Adults.*

By Dr. AUSPITZ.

(*Wien. Med. Wochenschr.*, Nos. 47, 48, 49, 50, 1863; *Gaz. Hebd. de Méd. et de Chir.*, No. 14, Avril 1, 1864.)

This memoir is a complete essay on the subject. We cannot give a detailed analysis of its different parts, but it will be useful to record here the results of the microscopical examination of the skin, for the author's case and that of Förster are the only two in which such an examination has been made with any completeness.

The patient was a young man, aged twenty-nine, who, in the year 1858, whilst in Galicia, suffered from two attacks of tertian ague, and had since then known the privations of extreme poverty. In the summer of 1861 he for the first time felt some inconvenience from the tension of his skin, and shortly after the whole surface of his body became of a strikingly bronzed, or rather brownish colour; the integuments becoming at the same time more tense, and having a shining look.

On examination, the lungs, heart, and liver were found normal; the urine contained no albumen, and the spleen was voluminous. Tactile sensibility, tested with Weber's æsthesiometer, was found to be diminished on the arms, the nucha, and the chest, precisely in the spots where the tension of the skin was at its maximum.

These particulars were noted down in November, 1862, on his admission into the General Hospital of Vienna. At the end of March, 1863, symptoms of Bright's disease showed themselves (albuminuria, slight œdema of the face), and on the 20th day following, the patient died of slowly-developed uræmia, without any modification having taken place in the induration and the colour of the integuments. The post-mortem examination showed the follow-

ing visceral lesions:—Dilatation of the bronchi of the right lung; hypertrophy and amyloid degeneration of the left side of the heart; kidneys, as in Bright's disease; spleen enlarged.

*Supra-renal capsules normal.* Fresh, as well as dried portions of the skin of one of the arms, of the chest, and the abdomen, were examined under the microscope. The epidermis was normal; the rete mucosum of Malpighi, of normal thickness, presented the same appearances as in the negro, its deepest layers forming blackish brown circles round the papillæ. The nuclei of the cells nearest these were surrounded by pigment granules of a dark brown colour. In the cells nearest the epidermis the deposition of pigment was less abundant, and here and there were even cells without a trace of it. The papillæ of the cutis vera were filled with corpuscles of connective tissue; the vascular loops of the papillæ were not enlarged, and were successfully injected by Schwimmer. Through half the thickness of the cutis vera were brown pigment cells, partly lying on the walls of bloodvessels, and partly accumulated in the neighbouring cellular tissue. From the rete mucosum the deposit of pigment cells spread into the cellular tissue investing the sudoriparous ducts, into that round the hair-bulbs, and into the epithelium of the sebaceous glands. The areolar tissue of the true skin itself was considerably hypertrophied in several places, but especially over the chest, and acetic acid disclosed the existence of numerous elastic fibres. The subcutaneous cellular tissue was as hypertrophied as the derma itself, but contained less fat than normally. There were no appreciable changes in the sebaceous or the perspiratory glands.

In Förster's case, the cutis vera and the subcutaneous cellular tissue could not be separated, and presented a smooth and hard surface; the cellular trabeculæ were notably thickened, and the abundance of elastic tissue contrasted with the almost complete absence of fat.

Auspitz's patient presented a complication not mentioned in previous cases of a similar kind, viz., Bright's disease, which showed itself several months after the induration of the skin. The author justly refers this affection, which brought on the fatal issue, to the cachectic condition of the patient. This cachexia had probably a paludal origin, but extreme poverty had also contributed to develop it. At all events, this case adduces further evidence to show that an antecedent cachectic condition is the most efficacious cause for producing the scleroma of adults.

In conclusion, we draw attention also to the author's opinion on the brown discoloration of the skin which has been so often noticed in scleroma. He groups it with those cases in which a development of pigment takes place in consequence of some morbid alteration of the skin, independently of all external irritation, and he attributes it to the arrest of the blood in the vessels of the skin caused by the hypertrophy of the areolar tissue. In proof of his assertion, he points to the accumulation of pigment cells along the intradermic vascular plexuses, as observed in his case.

ART. 84.—*On the so-called Parasitic Affections of the Skin.*

By MR. ERASMUS WILSON.

*(Medico-Chirurgical Review, January, 1864.)*

Mr. Wilson does not assent to the current view which ascribes the so-called parasitic affections of the skin to the development of vegetable growths, and the present article is an elaborate attempt to set forth his own view of the matter.

"More than twenty years since," says Mr. Wilson, "after a careful microscopic investigation of the pathological elements of which they are composed, we came to the conclusion that they resulted from an aberration of cell formation; that this aberration consisted in the growth and proliferation of the primary granules of which epidermic cells and hair-cells are normally constituted; that this growth and proliferation had the effect of arresting the granules at their embryonic stage, and in the performance of their embryonic functions, and, as a consequence, that the cell-tissue (epidermis and hair) composed of these embryonic granules and imperfectly elaborated cells, was, upon desiccation by the air, dry, spongy, friable, and brittle; that, in trichosis, this change alone existed in the hair and epidermis; whereas, in favus, the granules composing the yellow disk around the mouth of the follicles passed through a pustular stage, the consequence of a higher degree of inflammation, and, in their pustular condition, obtained their peculiar yellow colour. We called this morbid alteration of the primary granules of the epidermis and hair-tissue 'granular degeneration,' and subsequent experience has not altered our opinion."

Less exception will be taken to Mr. Wilson's remarks upon therapeutics than to his remarks upon pathology:—

"With the exception of mentagra, we believe depilation to be wholly unnecessary in these diseases; we believe that they may be successfully cured, as they have been heretofore, without depilation. We never find any overwhelming difficulties in the treatment of these complaints; they are tedious, but not remarkably so when properly managed, and we decidedly declare against depilation. Depilation may be, and no doubt is, a great boon in the treatment of tinea in France, but it is worthless in England, where more care is bestowed upon the constitutional treatment of cutaneous diseases.

"And what, it may be asked, is the treatment on which we rely for the cure of these diseases? We will state it briefly:—We remove crusts and furfuræ by thorough washing with the juniper tar or petroleum soap, or with a liniment consisting of equal parts of soft-soap, juniper tar, and alcohol. We repeat the washing daily with tepid or cold water, with the double object of cleansing the diseased parts and giving a moderate stimulus to the skin of the head; we comb the head well, brush it if not too sensitive, and night and morning we rub into the entire scalp, but most into the patches, an ointment consisting of one part of the nitric oxide of mercury ointment, diluted with three parts of fresh lard. In milder

cases we wash the head less frequently, but we continue the combing and brushing and anointing steadily. A failure of cure is an event that we cannot anticipate and rarely see.

"But we do something more: we administer mild tonics; we prescribe a generous diet; we treat symptoms; and, in a case of favus—a disease of the scrofulous diathesis—we have recourse to cod-liver oil and the iodide of iron. Moreover, in certain cases, where no indications of general debility exist, where the nutritive functions seem principally at fault, we administer arsenic, with the most brilliant success. Favus and Trichosis capitis are diseases of children and adolescents, and this method of treatment answers admirably with them. In Trichosis corporis (Lichen annulatus solitarius et serpiginosus) we have for many years been in the habit of prescribing a lotion, or ointment, of the bichloride of mercury; and in chloasma, or pityriasis versicolor, we prescribe ablutions with the juniper-tar soap, sponging with a spirituous solution of the bichloride of mercury in almond emulsion; or frictions at night with one of the diluted mercurial ointments already mentioned, and ablu-tion in the morning with the juniper-tar soap. In Trichosis barbæ, or mentagra, we are ready to admit the value and importance of avulsion of the hairs; not, however, as a means of removing a supposed parasite, nor of an irritant foreign body, but as a healthful stimulant to a part in a state of chronic and irritable inflammation.

"And this brings us to the question of the use of depilation: that it disposes to the cure of the local disease there can be no doubt. We cannot disbelieve the statements of Bazin that he succeeds in curing these diseases through the agency of depilation; but we do and must disbelieve that the removal of the fungus is the proper explanation of the cure. We see in depilation a stimulant, and a valuable stimulant—a stimulant that we ourselves commonly use when we seek to make a black hair grow up in place of one that is white—a treatment that for this purpose we have been in the habit of using for years, and with remarkable success; so that we have been led to regard avulsion as one of our best, indeed our only reliable remedy for producing *deep stimulation of the cutaneous tissues*, for setting up a new action in the papillæ of the hair; as the only remedy, in fact, by which we can reach successfully the fundus of the hair-follicle. And this, in our belief, is the 'methodus medendi' of depilation and avulsion in the phytodermic diseases. It sets up a new action, a healthful inflammatory process in place of a morbid inflammatory process—a process whose natural course is to end in resolution, instead of one whose nature is perpetuity. For morbid cell-genesis it establishes healthy and plastic inflammation and sometimes healthy suppuration, when, as Bazin declares, the fungus is starved or drowned. Even Bazin has recourse to avulsion as a stimulant in old cases of mentagra, wherein the hair acts the part of a foreign body, of a thorn, in the skin, and so keeps up irritation.

"Hardy makes the following very practical observation in reference to the treatment of the Phytodermata:—'It will not be

sufficient to destroy the parasitic fungi only ; we must modify the soil so as to render it inapt to the reception of new germs, and unfavourable to their nutrition. We must give tone to the constitution by means of tonics and bitters, prescribe good food and closer attention to cleanliness, and cut the hair short to admit of the action of the air upon the scalp.' "

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## PART II.—SURGERY.

### SECT. I.—GENERAL QUESTIONS IN SURGERY.

#### ART. 85.—*On the Treatment of Patients after Surgical Operations.*

By Mr. PAGET, Surgeon to St. Bartholomew's Hospital, &c.

(*Medical Times and Gazette*, August 16, 1864.)

In his address at the meeting of the British Medical Association in 1862, Mr. Paget made many admirable remarks upon this subject. The whole address, indeed, is at once practical and philosophical, and it ought to be carefully studied as a whole by every surgeon. We wish we could give our readers this opportunity; as it is, we must be content with quoting some remarks which appear to us to be especially deserving of attention.

"It seems to me very important," says Mr. Paget, "that we should be quite clear in recognising all cases of erysipelas, of pyæmia, of phlebitis, or nearly all of them, of secondary gangrene, of tetanus, and the rest, as really, and from their beginning, constitutional; as general, that is, before they are local; for if we might do so, then we might study them by the light of those which are the very types of these diseases, these acute morbid affections of the blood, namely, eruptive fevers, and study them by the light not only of their pathology, but by that which we have already learned to do in their management or their treatment. It is quite true that erysipelas or phlebitis is most apt to appear at the seat of the operation, and to look therefore like a disease of purely local origin, but the same will happen with the truest eruptive fevers.

"Some few years ago I cut a boy for the stone; three days afterwards he seemed to be in great peril of his life, with general disturbance of his system; the day after there appeared a brilliant red eruption at the wound. That was measles—earliest, most intense at the seat of injury, and thence it spread over the whole body, and passed by without doing damage. I have known the same case occur with scarlet fever after an injury to the knee-joint. Dr. William Budd has recorded a similar case of small-pox after a bruise upon the nates. So that really this local occurrence of erysipelas or other diseases at the seat of operation is no more proof of their true local origin than in these cases. Measles was not proved to

have a local origin because it occurred first and most intensely at the wound of lithotomy. And there is another character, one which seems to me very important in relation to the diagnosis between these diseases that are of true traumatic origin and purely local, and those which, although they occur at the seat of injury, are yet truly specific and of blood origin—namely, the difference of time at which the local inflammation will, in the several cases, set in.

“A true local and traumatic inflammation comes in either before, or with, or very little after the time of general reaction; so that within one or two days, usually, we find it at the wound, or it may be later—three or four, or in some cases even five days, when the general reaction has been long delayed. The later it is the worse. On the other side, that which is a specific blood-disease comes in after the reaction, and commonly even with considerable interval of time between the two. Thus, for example, we may find not unfrequently after an operation on the face, where these phenomena are best shown, or after amputation, the next day, or two days later, the parts around the wound may be swollen, œdematous, painful, and ruddy, the seats of active inflammation. But this is not erysipelas, nor a disease of any great moment, nor one that will tend to more than local troubles. I have never seen a case of that kind which required any active treatment. But after it is passed, if it has ever occurred—and it may be even many days later—there may set in another inflammation, looking, it may be, very like it, with similar swelling, redness, tension, and pain, but the later inflammation is sure to be one of erysipelatous or pyæmic origin, or in some other form specific. So, too, with phlebitis. On the day after the amputation the femoral vein, for example, may be sharply inflamed, tender, and painful, and with some constitutional disturbance; but this is never a disease of great moment; it passes by without treatment. But in that respect it is very different from the phlebitis which may ensue a number of days later, and which is quite surely pyæmic, or connected with some grave affection of the blood. I know, therefore, in these respects, nothing more important than studying the very time at which these inflammations set in. If they be early and only traumatic, they pass by without damage; if they be late, whatever the result, they must be regarded minutely as cases of general pyæmic or erysipelatous origin, indicating something wrong about the patient or within him—something to be amended.

“There is yet another character, namely, that inflammations, of however acute a kind, which are traumatic, are very seldom preceded by any appropriate constitutional disturbance. It is remarkable that it should not be, but we never see them thus preceded. On the other side, those that are of general or blood origin very rarely ensue without rigors, or some profound affection of the nervous system. In speaking of rigors, if I may diverge so far, I wish I could provoke some one to the more minute study of them, to see what their true physiology is. What is the meaning of that strange shuddering which we see as the precursor of some of the most for-



midable diseases that we have to deal with? so strange as it is too in its relation to the urinary organs, so often the precursor of great mischiefs; so strange in its relations to an accumulation of pus that cannot be discharged. I fear that we are as yet almost wholly ignorant of its physiology; but I would suggest—and let it be my contribution to the study I should like to incite some one to—that we are too much in the habit of thinking that its most important indication is in the sensation of cold which most patients endure with it. Yet this is really only a sensation; and, moreover, only a subjective one; for it is certain that even before the rigor ensues the temperature of the surface of the body is increasing, and that it continues to increase during the whole course of the rigor. I would suggest that they should be studied rather in relation to convulsive diseases; and my reason is, that they not only in a thorough rigor have all the essential characters of convulsion, but may also, as surgery sometimes unhappily shows, be replaced by convulsions.

“Three years ago I operated on a gentleman for stone. Two or three days after the operation he had a terrible rigor, and that was followed by great heat, profuse sweatings, and then by extensive suppuration over the surface of the chest. A few days later, another rigor ensued with similar phenomena subsequent to it, and with other characters of pyæmia, and with a second great suppuration. Some days later than that he had a severe epileptic seizure, and that was followed in the same way with a profuse suppuration, again in another part of the walls of his chest, and then with various signs of phlebitis he gradually recovered.

“Not long ago a woman was under my care in St. Bartholomew’s Hospital with relapsing erysipelas. All the previous attacks of erysipelas were preceded with definite rigors. A rigor regularly told of the coming relapse of erysipelas, but the last attack was preceded by severe convulsions, and they were followed by a three days’ coma, and the coma was not relieved until the erysipelas appeared. For the rest of her life she had no further cerebral symptoms, and after her death we found no indication of disease in the brain. She had died only exhausted.

“This case has been told me: A member of our profession had chronic pyæmia; in all the earlier parts of his illness each suppuration characteristic of it was preceded by a rigor; in the latter part tetanic convulsions preceded each suppuration. I could mention, I think, other instances in which convulsions do thus replace and substitute the ordinary phenomena of a rigor. I imagine, indeed, that those that are familiar to many members of the association, convulsions that precede eruptive fevers in children, are of the same kind. But this must suffice for the suggestion I have made, and I am diverging too far from the subject that I began with, which was, namely, to indicate by those precursory constitutional symptoms the necessity of distinguishing clearly between those inflammations that are truly local, and those that are pyæmic or of erysipelatic origin, and by that to tell what seems to be a greater need, that we should study all these diseases by the light of the true eruptive fevers; I

mean, namely, all cases of erysipelas, of pyæmia, of secondary gangrene, of secondary phlebitis, and even, I would add, of tetanus, and all others that we have to class together as the great source of our mortalities after operation.

"But the mere enumeration of these cases must be sufficient to tell that I cannot speak of them all now; only let me take the liberty of mentioning one or two things that have been most upon my mind, as most worthy to be told to those that have a large and widely-extended practice, and who might, with their contributions, bring in such a mass of evidence upon the point as has never yet been accumulated. First of all, in regard to the causes of these things. We know very well that among the general external causes for all these mischiefs there are the crowding of patients into too limited a space, that is, into spaces where they have too limited a supply of air, uncleanness—in a word, if I might sum it up quickly—dirt of all kinds, within or without; and for internal conditions, we know, very well that those patients are most prone to them who are, as we may believe, most unstable in their composition—namely, those whose tissues are disordered, either by defective food, or by intemperance, or by excess of animal food, or those who retain in their frames too large a quantity of refuse—matter not sufficiently excreted—as the gouty, and above all, those that suffer with granular degeneration of the kidneys. We know well enough that in any of these the ordinary consequences of a surgical operation are sufficient to bring in that morbid condition of the blood which manifests itself in erysipelas, pyæmia, gangrene, or some other source of fatality. But my impression is, that there are yet some other causes to be sought for; for where even we may believe that all these are absent, yet these plagues come in. For example, I do not know that we can assign any one of these diseases to be a product solely of hospital practice. I must say for myself that I have never seen one of them more intense or more fatal than I had seen it in single cases amongst the best and most well-ordered houses of the metropolis; certainly not one that I could mention which has been worse in St. Bartholomew's Hospital than I have seen it in a house, in a room, and under a charge with which I could find no distinct fault. It may be said that in hospitals we can never altogether exclude the sources of foulness and infection. I am not prepared to say, I am only prepared to doubt, whether they may not exist also even in our best houses; whether our sanitary arrangements are anywhere so perfect as to shut out the sources of even the worst form of zymotic disease.

"I can only suspect that there are yet some things hidden. I cannot yet profess myself prepared to believe that there is no one of us living in such conditions of external health, but that after an operation there is that lying at his bedside which will breed some dire calamity to him. But I would suggest here, not only to hospital practitioners, upon whom, most unjustly, as it seems to me, the whole burden of proof of these cases has been hitherto cast, but to those who practise also in private, that in every case where any one of these diseases occurs, we should most conscientiously try,

and that we should look for its source to the hospital or the private house, or the practice should be brought to a strict trial—a private trial, if you will—but a just and a true trial before our conscience; and if the hospital, or the house, or the practice be found faulty, let it be condemned and at once amended. Another point I would suggest is, that it is not enough for us to study these things only in their worst forms, in those in which they are deadly, for we can never know the true extent of a mischief if we know none but those whom it kills. If a patient barely escapes with his life, or even in the process after an operation he passes through any peril, even of the least, he may indicate as great a necessity for amendment of the conditions in which he has been placed as if he had died. This is true of erysipelas; and there is a thing to be considered, that, seeing how vast are the differences between the worst and best cases, it may be quite within our power to reduce the whole of the cases that do occur to the condition of the lowest peril.

“But much more, it seems to me, is this the case with pyæmia, or rather with the group of diseases which we have to include under the most inappropriate of all terms, a term not only insufficient, but altogether false: for the one thing there is not in pyæmia is pus in the blood. Look only at the number of cases that are included in this disease, and the number which altogether elude not our observation but our record. There are, first, cases of acute pyæmia, well marked by rigors, by profuse sweatings, by rapid exhaustion, by articular suppurations, by pneumonia, deposits of pus here or there, and rapidly fatal. These are the cases that swell up our records of mortality; but there are others which ought to be recorded and studied with equal care—namely, the chronic, where the same series of phenomena ensues, occupying only a longer time for their occurrence; and again there are yet others as truly pyæmial, those which are seldom recorded at all—namely, those in which there are but threatenings of these conditions. Patients that have repeated rigors, slight pains about the joints, and abscess at some distant interval of time, pass through their course with that which looks scarcely like peril, and yet it may be the very same disease which, overlooked in the hospital, may cause the deaths of all patients that next come under operation; and again, there are yet others, cases that after an operation pass on with one abscess after another. All are familiar with these, but they are not reckoned commonly as pyæmial. The whole history of their occurrence, and the most accurate comparison of them with others of the same acute type, shows their identity, and there are yet others, where patients after operations are attacked with inflammation, first in one vein and then in another, then with induration of the subcutaneous cellular tissue, then with a small deposit of pus that is soon discharged and healed up. These again are cases that we need minute record of, that in all hospital practice should be recorded, in regard to the grave question whether these might be avoided; for I venture to say, if we can avoid these more local manifestations of the poison, so surely we can avoid the more principal ones.

“I have said that one advantage of studying these cases by the

light which we have from those that are the express and typical examples of blood-disease of the acute form is, that you have to treat them after the same method as we now deal with the eruptive fevers. I know, indeed, that with regard to these our medical power can scarcely be spoken of as in any strict sense curative—we manage them.

“I wish surgeons could manage pyæmia as well as physicians and general practitioners can manage scarlet fever or eruptive fevers that they have to deal with; but still even they do manage more than cure them. And yet let me suggest that there is great hope that we may discover absolute specifics for these things, when we see that some cases or some symptoms may be cured with apparently a true specific power; for example, the recovery of certain patients from erysipelas under the influence of large doses of iron, so definite that one must surely speak of it as a true specific for the disease in those cases. No one, I think, has been more disappointed than myself in the endeavour to make iron useful in all cases; but no one can be more convinced that there are certain cases in which iron is a direct and distinct cure for erysipelas. Quinine has in some cases a power of the same kind. It cures, as Dr. Latham says, outright, and in the strictest sense.

“And there is another remedy of this kind. Quinine in large doses will cure the rigors of an acute pyæmia almost as certainly and as swiftly as it will cure ague; and curing these by what seems to me a distinct and specific power, it will sometimes help materially to the final recovery. But I cannot profess that I have seen it do more than thus help; and if I look back to the records of the many trials and many disappointments I have endured, I think there is but one thing that I have ever seen have such as I should call fair remedial power over pyæmia: that is, a profusion of fresh air. The most remarkable recoveries from pyæmia—they are three—that I have seen were those in which the patients may be said to have lain day and night in the wind. They lay with the wind blowing all round about them through the room. They so lay, that I have said that I wished they could hang our patients in beds outside of the hospital, rather than within the walls.”

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#### ART. 86.—*A Comparison between the Ligature and Acupressure.*

By Dr. SIMPSON, Professor of Medicine and Midwifery in the University of Edinburgh.

(*Medical Times and Gazette*, February 6, 1864.)

This comparison refers only to leading differences. It might easily be made much longer.

##### *The Ligature.*

1. Requires isolation, and consequently some detachment, of the end of the vessel.

##### *Acupressure.*

Requires none.

*The Ligature.*

2. Produces laceration of the two internal coats of the artery.

3. Produces strangulation of the external coat.

4. Leads on to ulceration or molecular destruction of the external coat at the constricted part.

5. Causes mortification of the artery at the tied point, and usually also below it.

6. Produces consequently a dead, decomposing slough of each part ligatured.

7. If organic, it imbibes animal fluids, which speedily decompose and irritate.

8. Requires to produce the highest stages of inflammation at each ligatured end—viz., ulceration, suppuration, and mortification.

9. Is not removable except by the slow ulceration and sloughing of the ligatured vessel, which requires a period of from four or five to twenty days and more.

10. Generally requires two persons for its application.

11. Is sometimes followed by secondary hæmorrhage, as an effect of ulceration and sloughing.

12. Sometimes fails altogether in cases of recurring secondary hæmorrhage.

13. Sometimes cannot be applied till the surgeon first exposes the bleeding vessel by the knife.

14. Prevents, as a foreign body, adhesion by first intention along its tract as long as it remains.

15. Stops only the artery tied.

*Acupressure.*

Produces none.

Produces none.

Produces none.

Produces none.

Produces none.

Requires only metallic needles or threads, which are incapable of imbibing animal fluids.

Requires to produce inflammation up to the stage of adhesion only.

Is removable in an hour, a day, &c., at the will of the operator.

Requires only one person.

Is seldom followed by this form of secondary hæmorrhage, as there is no ulceration or sloughing.

Has succeeded under such circumstances where the ligature has failed.

Does not necessarily require the exposure of the vessel, and, therefore, has sometimes prevented the necessity of using the knife.

Is early withdrawn, and is hence far less opposed to primary union.

Stops generally both artery and vein.

*The Ligature.*

16. Stops only one artery.

17. Is not unfrequently followed by surgical fever from leading to the formation and allowing absorption of septic matters.

18. For these various reasons, primary union rare, healing slow, and septic or surgical fever not uncommon.

*Acupressure.*

May close two or more smaller arteries by means of a single needle.

Is much less likely to be followed by surgical fever, because it does not lead to the formation of septic matter, and closes the veins as well as arteries.

Primary union more frequent, healing quicker, and septic or surgical fever less common.

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ART. 87.—*A New Mode of arresting Venous Hæmorrhage after Amputation.*

By Mr. PORTER, Surgeon to the Meath Hospital, &c.

(*Dublin Quarterly Journal of Medical Science*, November, 1863.)

In an article containing several miscellaneous contributions to operative surgery Mr. Porter writes :—

“In amputations, when the circulation has been controlled by pressure with the finger of an assistant, or by some of the more modern tourniquets, such as Signoroni's, Skey's, or that of Salt, which compress chiefly the main vessels, it is not by any means uncommon for the operator to be annoyed by venous hæmorrhage. This can be explained by the fact that the smaller arterial branches arising above the site of pressure carry a considerable quantity of blood to the limb below the point compressed, and the blood is prone to pass from the veins accompanying those arteries into the lower part of the larger ones, and flow from their divided mouths. Generally speaking this subsides on placing the stump in an elevated position, or by pouring a stream of cold water over it; but on the other hand, I have frequently seen a surgeon, after all the arteries had been carefully deligated, obliged to keep the cut surface exposed to the air for a long time, with the point of his finger fixed on a vein, before the flow of blood could be checked. Again, I have witnessed such bleeding arrested only by placing a pledget of lint with a string attached for its removal, on the vessel's mouth. This, independently of retarding, to some extent, the healing process, caused a large amount of suffering on its withdrawal some hours subsequent to the operation; and may also be objected to on the ground that it keeps a supply of pus, putrid blood, or serosity, in constant contact with the orifice, for absorption. Surgeons in this country are not favourable to the practice of ligaturing a vein, although having the sanction of such authorities as Hey, Desault, and Hennen. The dangerous, and sometimes fatal, phlebitis fol-

lowing such procedure has given us a wholesome dread of tying, or in any way inflicting injury on these vessels. Again, I should much fear that placing a ligature round both vein and artery—as, for example, the femoral vein and artery (Desault)—would prevent the cord having the desired effect on the latter, as the vein must hinder it from dividing the internal and middle coats of part of the tube, and thus render the possibility of secondary hæmorrhage to be apprehended. It occurred to me that the trouble might be got rid of by the simple contrivance of temporarily grasping the mouth of the vein within the jaws of a very small Dieffenbach's artery forceps, having connected with it a string to take it away when all bleeding had ceased. Its pressure effectually controls the flow of blood; its bulk forms no obstacle to bringing the parts into close approximation; and it can be removed with the greatest ease, almost, indeed, with the same facility that we draw away a ligature. At my request, my colleague, Mr. Collis, lately tested the plan with the most marked advantages, in a case of amputation of the thigh, in which bleeding from the femoral vein proved troublesome. My most sanguine expectations were realized by its action, as it instantly sealed the vessel, and so guarded against further hæmorrhage and purulent absorption. It inflicted no injury; and, in the case above-mentioned, it was pulled away in forty-eight hours without causing any pain to the patient."

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ART. 88.—*On a New Method of procuring the Consolidation of Fibrin in Certain Incurable Aneurisms, with Illustrative Case.*

By Mr. MOORE, Surgeon to the Middlesex Hospital, and Dr. MURCHISON, Physician to the London Fever Hospital.

(*Lancet*, April 2, 1864.)

This "new method" formed the subject of a paper which Mr. Moore submitted to the Royal Medical and Chirurgical Society. The paper was illustrated by a case in which an aneurism of the ascending aorta was treated by the insertion of wire. The case was reported by Dr. Murchison, Mr. Moore being responsible for the surgical remarks.

In February, 1863, Mr. Moore had been led to review the conditions of such aneurisms as could not be surgically treated through the artery, and had devised a method of producing consolidation of them in accordance with the mode of their natural cure.

The principles involved in this method were—1, that large aneurisms can only be benefited by the deposition of fibrin within them; 2, that the natural means of obtaining fibrin from the blood are inadequate, because it can only settle in layers on the wall; 3, that in the central part of an aneurism there is a large quantity of blood with fibrin ready to collect on any apt material; 4, that fibrin may

be elicited from arterial blood by exposing a foreign body in it. Two cases were quoted in which this had occurred: one, an instance in which gangrene of the leg had resulted from plugging of the arteries by fibrin detached from a needle in the left ventricle; the other, that of a sailor, who died three days after being shot, and in the interior of whose ascending aorta was a bullet imbedded in fibrin.

The foreign body which, according to our present knowledge, would produce least irritation, was wire. If a large quantity were coiled in an aneurism, it would attract fibrin, as the twigs do in whipping freshly-drawn blood, support the mass which it entangled, and lead to the cavity of the aneurism being eventually filled. The wire might be passed in through a small canula, with care not to leave the last end in the minute wound, and not to direct a coil into the orifice of the artery.

Only a sacculated aneurism could be so treated, not one which had two orifices, since fragments of fibrin would be broken off by the force of the current. Brasdor's operation might be previously required in some parts. This danger might be incurred in a sacculated aneurism also, if wire enough were not introduced, because of the large intervals which would be left between the few coils of wire. The wire would remain in the solidified aneurism, and be harmless.

Mr. Moore then describes the operation by which the foregoing proposal might be carried out.

*Report of a case of Saccular Aneurism of the Ascending Aorta projecting through the Anterior Wall of the Left Side of the Chest.*

Daniel D—, aged twenty-seven, became a patient at the Middlesex Hospital, under Dr. Murchison, on Nov. 10th, 1863. Eight years before he began to suffer from palpitations and dyspnoea, and after some months he had an attack of hæmoptysis. The hæmoptysis recurred at intervals, and in November, 1862, he first noticed a pulsating swelling in front of the chest, to the left of the sternum. This increased with considerable rapidity, and the patient now became subject to severe attacks of angina pectoris. At the time he first came under observation the tumour was situated in the angle formed by the left clavicle and the left margin of the sternum; it measured ten inches in circumference at its base, and projected about two inches from the wall of the chest; its surface was rounded, and tolerably uniform, except at the upper part, where there was a tendency to point. Over the whole surface of the tumour distinct pulsation could be felt, each beat corresponding to the impulse of the heart. Nothing resembling an aneurismal bellows-murmur could be heard; but both cardiac sounds, and particularly the second, were louder over the tumour than at the base of the heart. There was dulness on percussion to the right of the tumour, over a space measuring two inches transversely, and three inches from above downwards. The apex of the heart could be felt beating between the fifth and sixth ribs. The cardiac dulness was slightly increased, but the sounds heard on auscultation were normal. There was no inequality of the arterial pulse on the two sides of the body. The voice was normal. The patient had an occasional cough, and expectorated a viscid muco-purulent matter, but there was nothing peculiar in the character of the cough. Over the whole of the left side of the chest there was comparative dulness on percussion, with



coarse, at some places tubular, breathing, and subcrepitant râle. On the right side of the chest the percussion was clear and the breathing puerile. The appetite and digestion were good, and the bowels regular. There was no dysphagia, and no pain or tenderness at any part of the spine. The pupils were of normal and equal size. On November 20th, and again on December 28th, the urine was ascertained to be free from albumen.

After the patient was admitted into the hospital, on November 20th, the attacks of angina almost entirely ceased. The pulse varied from 104 to 116 when the patient sat up, but would fall to below 100 when he lay down. The size of the tumour continued to increase, until, on the morning of January 7th, 1864, it measured  $16\frac{1}{2}$  inches at its base, and projected  $2\frac{1}{2}$  inches from the wall of the chest. The tendency to point at its upper part became more decided, and the integuments at this part were much attenuated, and assumed a dusky-red discoloration, while occasionally they were the seat of pricking pains, and were slightly tender. These changes were most marked during the last week of December and the first week of January. The patient's general health notwithstanding did not suffer. He ate and drank well; he got up daily, and walked about the ward. On the evening of January 6th he played a game of draughts with another patient, and on the following morning he was up and walking about as usual.

Early in January it became obvious that the bursting of the aneurism through the integuments could not be long delayed. It was accordingly resolved to recommend to the patient Mr. Moore's proposed operation. During the month of December this operation had been carefully considered, but it was then deemed inadvisable to have recourse to it. It was now explained to the patient that the procedure in question offered some chance of prolonging his life, although in itself it was not free from danger. The patient at once assented, and the operation was performed on January 7th, at half-past one P.M.

The operation consisted in the introduction of a quantity of fine iron wire into the aneurism, with the object of inducing coagulation. A small pointed canula was inserted into the tumour, and the wire was passed in through this without difficulty. The operation occupied one hour, and the quantity of wire introduced was twenty-six yards. It gave rise to no pain or inconvenience excepting a slight and transient feeling of faintness. The quantity of blood lost did not exceed half a fluid ounce.

The immediate effects of the operation were a reduction of the pulse from 116 to 92, an almost complete cessation of the pulsation in the tumour, and a diminution in its size. Immediately before the operation the circumference of its base was  $16\frac{1}{2}$  inches; at the close of the operation it was 16 inches. These changes began to be noticed soon after the commencement of the operation, and became more marked as it was proceeded with. At a quarter past eleven P.M. the patient was asleep, and his pulse was only 78. He slept comfortably during the night, and had no bad symptom until the following morning.

On January 8th, at 9 A.M., the patient was seized with a fit of rigors lasting three quarters of an hour, and followed by great pain in the back of the neck and some pain in the tumour. At 1 P.M. the pulse had risen to 144, and was full and bounding. The action of the heart was tumultuous, and all the arteries of the body could be felt throbbing with considerable force, but there was no difference in the force or volume of the beat on the two sides of the body. The patient complained of great pain in the tumour when he moved. The tumour was already somewhat larger than before the operation, and the dusky discoloration was of a deeper tint. There was intense thirst and great restlessness; the skin was dry and very hot; and

the respirations were forty. At twenty minutes past one P.M. the patient was bled to the extent of eighteen ounces, and at half-past three P.M. twelve ounces more blood were abstracted. After the second bleeding twenty minims of Battley's sedative solution were administered.

From these measures the patient derived temporary relief, but he had a restless night, and at half-past six A.M. of the following morning (January 9th) he had a second attack of rigors. At one P.M. he had a third attack. At half-past one he was in great distress, owing to pain in the tumour and at the back of the neck. The tumour was extremely tense and decidedly tender, particularly at its upper part. Its circumference at the base measured  $1\frac{1}{2}$  inches more than before the operation. Distinct pulsation could be felt again at its upper part. The pulse was 136 and soft; the action of the heart was less tumultuous, and there was no abnormal cardiac sound. Large and repeated doses of opium and digitalis were now commenced. At half-past ten P.M. the pulse had fallen to 126, but the patient complained of being afraid to cough on account of a severe jerking pain in the tumour, which the effort to do so always induced.

On January 10th, at 10 A.M., the patient had taken seventy-three minims of tincture of digitalis, and the equivalent of almost ten grains of opium, during the preceding twenty-one hours, and the result was, that he was in less pain, the pulse had fallen to 104, and the tumour was slightly reduced in size, its circumference being half an inch less than on the preceding day. At half-past seven P.M., however, he was seized with a severe burning pain in the tumour, and a feeling of tightness as if it were going to burst. The tumour was larger and more tense than ever, the pulse rose to 132, the heart's action was again more impulsive, and there was intense thirst. To-day it was noted for the first time that the pulses in the right temporal and radial arteries were slightly fuller than in the corresponding vessels on the left side.

Opium in large and repeated doses, along with digitalis, was persisted with. In the course of two days and a half (commencing on Jan. 9th) as much as the equivalent of twenty-seven grains of opium was administered. The treatment, however, failed to give relief. The tumour increased rapidly in size, and on the 11th distinct pulsation could be felt at several parts of its surface. The radial pulse was 128, small and compressible, and still fuller on the right side. The beat of the right anterior tibial artery was also decidedly fuller and stronger than that of the left. The cardiac impulse was extremely feeble. The respirations were performed chiefly by the diaphragm and the muscles on the right side of the chest; the left side of the chest was almost motionless. The whole of the left side of the chest in front, unoccupied by the tumour, was dull on percussion, and no respiratory sound could be heard on this side, except immediately below the clavicle. Brandy and other stimulants were now given, but without any decided result.

On the morning of the 12th the patient was evidently sinking. The pulse was about 136, but was so weak as to be counted with difficulty. The circumference of the tumour at its base was now  $3\frac{1}{4}$  inches more than before the operation, and the urine passed during the night was found to be loaded with albumen. At 11 A.M., four days and twenty hours and a half after the operation, the man died.

An autopsy was performed a few hours after death. The walls of the external tumour were formed by the integuments and fibres of the pectoral muscle, infiltrated with serum. They were nowhere less than a quarter of an inch in thickness. The skin covering a great part of the tumour presented a deep livid hue. The interior of the tumour was filled, for the most part, with a fibrinous coagulum, enveloping and imbedded in the coils of wire, and firmly adherent to the surrounding walls. The rest of the cavity

contained fluid black blood. The interior of the outer tumour was nowhere lined with a prolongation of the arterial coats; but it communicated with the proper aneurismal sac within the chest by two large openings in the first and second left intercostal spaces, the intervening rib being bare and eroded, and at one place broken through. The aneurismal tumour within the chest was about the size of a man's fist. It lay immediately behind the sternum; it encroached slightly upon the upper lobe of the left lung, and inferiorly it rested upon the right auricle. It was partially filled with a fibrinous coagulum, which was continuous with that in the outer tumour, and was adherent at one part over a space measuring about one-third of an inch in diameter. It communicated by a circular opening, scarcely so large as a sixpence, with the ascending aorta. Through this opening a clot projected from the aneurism into the vessel, and extended downwards into the heart, and upwards into the arch. The greater part of this clot was evidently of post-mortem date; but part of it, close to the opening, was pale, firm, and laminated. There was considerable atheroma of the coats of the thoracic aorta. The pericardium contained about eight ounces of turbid serum, and its opposed surfaces were coated with a thin layer of recent lymph. The upper part of the parietal pericardium presented a patch of livid discoloration, about the size of a florin; and at the centre of this patch the cavity of the pericardium was merely separated from that of the aneurism by a delicate membrane. It was at this part of the aneurism that the coagulum was adherent. The heart was slightly hypertrophied. Its valves and muscular tissue, and likewise the coronary arteries, were healthy. The left lung was everywhere firmly adherent, and its pleura much thickened. On section, numerous cavities were observed, evidently resulting from dilatations of the bronchial tubes. In the intervening spaces a firm fibrous tissue took the place of the normal vesicular structure. The right lung was for the most part healthy. Both kidneys contained a number of circumscribed abscesses, varying in size up to that of a small pea. A cluster of six of these small abscesses was found at the apex of the left kidney. In the cortical substance of both kidneys a number of patches of yellowish deposit, of a large size, but less defined outline, were also observed. On microscopical examination this appearance appeared to be due to the presence of a granular exudation deposited between the uriniferous tubes. The liver was large and fatty. The other parts of the body could not be examined.

After recording the history and post-mortem appearances of the case, Dr. Murchison enumerates some of the more important features of clinical interest, independent of the operation, which it presented.

In his concluding remarks Mr. Moore refers first to the circumstances of the operation, and to its early effects, which were highly satisfactory. So much fibrin appeared to have collected at the end of an hour that the pulsation of the tumour and its sharp second stroke were no longer perceptible; the aneurism had much diminished in size; the pulse, which, notwithstanding medicines, had beat 112 for weeks previously, and was 120 before the operation, had fallen to 92, and at night was about 80. This unlooked-for abundance of the fibrin, accumulated not by an inflammatory, but by a mechanical process, was an unprecedented circumstance. Its effects could not be foretold. It appeared to have caused local inflammation and the rigors, with great acceleration of the pulse. No aneurism could long resist such a pulse. Death had probably resulted from acute pericarditis, which was induced, not by com-

tinuity with the inflammation outside the chest, since neither the inner aneurism nor the pleuræ were inflamed, but incidentally by the imminent bursting of the intra-thoracic aneurism into the pericardium. No fragments of the clot of fibrin, large enough to be detected by the naked eye, had been detached, but microscopic portions were supposed to have existed in the kidneys. Neither the old nor the recent disease of the kidneys had actually caused death, which was due to the changes about the chest, and was, through the pericarditis, an indirect and not inevitable consequence of the operation. No coil of wire had passed through the opening of the aneurism.

Three facts appear to Mr. Moore to justify a repetition of the operation, or of some modification of it:—1. The separation of fibrin upon the foreign body, and its rapid deposition. 2. The exemption of the inner aneurism from inflammation, probably to be accounted for by its possessing a lining membrane, which the outer cavity had not. 3. The firm adhesion of the clot to the wall.

Not having yet thought of a more suitable foreign body than wire, he had but two modifications of the operation to suggest:—1. The introduction of a smaller quantity. The objections to this had already been pointed out. 2. The use of slender needles as temporary means of procuring the consolidation of the fibrin. The safety of this must depend on the number of needles which might be inserted, the gentleness with which they should be withdrawn, and the period at which fibrin so procured should acquire a sufficiently firm attachment to the wall of the aneurism to allow of the artificial support of the needles being dispensed with.

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ART. 89.—*On the Prevention of the Poisonous Effects of Anæsthetic Agents.*

By M. SIMONIN.

(*Rev. des Sociétés Savantes*, Juin 26, 1843; *Medico-Chirurgical Review*, April, 1863.)

"M. Simonin, in treating on the collapse of the circulatory and respiratory organs during the employment of anæsthetic agents, states that the two most important points to be observed are the insensibility of the temporal regions and the narcotism of the masseter muscles. In speaking of the peripheric insensibility resulting from the inhalation of anæsthetic agents, and from their use *per anum*, he says that all parts of the periphery of the body do not become insensible at the same moment: thus it takes several seconds before anæsthesia is produced on the skin of the forehead and the temporal regions, and several minutes to produce the same result on the skin of the hands and the feet. The time which elapses between the narcotizing of the extremities of the limbs and that in which the skin of the frontal and temporal regions ceases to react is rather longer, when, instead of the vapour of chloroform, the patient in-

hales that of ether. This time is longer still, when ether is introduced *per anum*. To discover in time the anæsthesia of the various parts of the periphery of the body, the action of the anæsthetic agents must be decreased, and punctures be made on the different parts above-mentioned about every ten seconds or oftener. The disappearance of these phenomena takes place in an inverse order to that of their appearance. With regard to the action of the same agents on the muscular system, M. Simonin opines that the contraction of the masseter muscles appears last of all during the excitation of the muscular system, often when the rest of the system is relaxed. This local rigidity is the indication of a very near collapse of all the organs, especially those of the circulation and respiration. Anatomy points out the cause of these facts, and the explanation shows the importance of their observation during anæsthesia. It is the fifth pair of nerves which gives sensibility to the skin of the temples; it is the same pair which furnishes ramifications to the masseter muscle. This fifth pair arises from the lateral and anterior part of the medulla oblongata, and as soon as the parts to which it distributes itself, either the organs of sensation or of movement, show the commencement of narcotization. The movements of the respiration and circulation soon become disturbed, for the vital point is in its turn about to be influenced. The author also remarks that the sensitive action of the nervous filaments pertaining to the skin is extinct before the motor action ceases. This normal absence of synchronism shows that there is no reason to be uneasy even when the sensibility of the temples ceases to exist. This is an important fact, and is the result of researches made at Nancy, where it was shown that subcutaneous anæsthesia did not exist anywhere so long as sensibility remained in the temples. To this rule M. Simonin only found one exception during sixteen years' observation. In many cases collapse of the masseter muscles may be seen without life being compromised; uneasiness should, however, arise in the mind of the practitioner with this last period of muscular insensibility. The permanence of muscular rigidity which the contraction of the jaws produces is a favourable physiological limit, which he must try not to overstep, whenever the opening of the mouth is not one of the conditions of the operation to be performed. Trismus has always reassured the experimentalist, when several other symptoms of profound intoxication during anæsthesia have alarmed him. It is thus important to ascertain the disappearance of sensibility in the temporal regions, and to be assured of the state of the elevating muscles of the lower jaw, since the observer has then under his eyes, and with the greatest ease, the course of the progress of the intoxication of the medulla oblongata, and in the generality of cases, while ceasing to employ a poisonous agent, he has often the power to prevent the last and dreaded phases of anæsthesia—namely, collapse of the circulation and of the respiration—in a word, death."

Dr. B. W. Richardson, who supplies the preceding abstract of M. Simonin's observations, adds this comment:—

"We have pleasure in bearing testimony to the accuracy and importance of M. Simonin's observations. Our experience, like his,

and derived from long research, is, that the muscles which raise the lower jaw are the last that collapse under the use of anæsthetics. Hence we have seen more dangerous symptoms during profound anæsthesia for operations on the mouth, such as extraction of teeth, than under any other circumstances. The exposition of M. Simonin is also in our opinion exceedingly sound and common-sense, and we specially recommend his advice respecting the necessity of observing the contraction of the elevators of the jaw to those who are learning how to administer narcotic vapours with scientific judgment and knowledge."

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ART. 90.—*On Death from Chloroform.*

By Dr. MARCET, Assistant-Physician to the Westminster Hospital.

(*Medical Times and Gazette*, July 20, 1861.)

When chloroform is inhaled, and consequently brought into contact with the air-cells of the lungs, it passes rapidly into the blood, by means of which it is carried to the brain. If the administration of the anæsthetic agent be suspended, the chloroform will be eliminated from the body by the respiration, each inspiration displacing most of the vapour contained in the blood exposed by the lungs to the action of air during that inspiration. The elimination from the blood of any very volatile substance possessed of a stable chemical composition may be considered, as a rule, to take place through the lungs. This might have been anticipated by a consideration of the displacement of the carbonic acid of the blood by the air inspired, and has been placed beyond doubt by a well-known beautiful experiment of M. Claude Bernard, where an aqueous solution of sulphuretted hydrogen being injected into the blood of a dog, the animal, in the course of one or two minutes expires the whole of the poisonous gas. MM. Lallemand, Perrin, and Duroy have shown experimentally that this law is applicable to chloroform, and consequently there is not the slightest doubt that when blood contains chloroform it is removed therefrom by means of respiration.

If the air inspired be pure, the displacement of chloroform from the blood in the lungs will be very great; if this air should contain chloroform the displacement will be less, just as when air containing a large proportion of carbonic acid is breathed, the removal of the carbonic acid of the blood is checked. When a patient begins to inhale chloroform, a portion is absorbed by the blood, the remaining is expired; but shortly afterwards, in addition to the expiration of that part of the chloroform which has not been taken up by the blood, a certain quantity of that which has been absorbed is also ejected, being displaced by the air mixed with the chloroform inhaled. At this stage, however, there is still an accumulation of the anæsthetic agent in the blood, more being taken into the circulation than given out; gradually complete insensibility is produced, and the handkerchief is removed from before the face of the patient; he

now begins ridding himself rapidly of the chloroform, and recovers consciousness, unless more of the anæsthetic agent be exhibited. By the careful administration of chloroform the state of insensibility may be kept up for a considerable length of time; during this period it is obvious that the accumulation of the vapour in the blood no longer takes place, otherwise it would invariably produce death; there must consequently be an equilibrium between the quantity of chloroform absorbed and that which is displaced and eliminated by the process of respiration. If, during this state of insensibility, from any cause whatever, the power of absorption of the blood for chloroform be suddenly increased, or its property of giving it out to the air inspired be diminished, then death will take place from an accumulation of the vapour in the blood. It is difficult to imagine that the power of blood of absorbing the substance under consideration should be suddenly increased; but there is a very simple cause impairing its elimination from the blood—viz., the administration of the chloroform vapour in too concentrated a condition. Just as an excess of carbonic acid in the air prevents, or interferes with the elimination of that contained in the blood, so must an excess of chloroform in the air prevent or interfere with the exit of chloroform already existing in the blood; therefore, the blood goes on taking up chloroform, and giving out less than a quantity equal to that absorbed; at the same time the evil may be increased by a few deep inspirations, taken unconsciously, although apparently with the view of ejecting the poison, and life is suddenly extinguished.

The conclusion of the whole matter is:—

1. That chloroform must be administered cautiously, and its effects watched with particular attention, if, although the vapour be freely inhaled, the patient do not become insensible within the usual time.
2. That in every case where chloroform is administered, as soon as the state of insensibility is obtained, the vapour must be exhibited diluted as much as possible with pure air; and air free from the anæsthetic agent ought to be allowed frequently into the lungs to remove the excess of the vapour present in the blood.
3. That during the administration of chloroform great attention should be paid to the state of the respiration, which ought to guide the exhibition of the anæsthetic agent still more than the condition of the pulse. If the inspirations become less deep and respiration appear failing, air free from chloroform ought to be immediately allowed into the lungs, not only because this state of the respiration is an indication of there being an overdose of chloroform in the blood, but also because the diminished respiration is in itself a cause of danger by preventing the blood from ridding itself of the chloroform it contains.
4. That when a patient has sunk under the effects of poisoning by chloroform, the only means of restoring animation is by artificial respiration, adopting such method as is best calculated to introduce as much air as possible into the lungs, in order to remove the poison from the blood, at the same time stimulating the action of the heart.

It is due to Mr. Clendon and to MM. Lallemand, Perrin, and Duroy to state that they have already called attention to the importance of looking closely to the respiration during the administration of chloroform; but these gentlemen have overlooked the fact that the presence of an excessive proportion of chloroform in the air inspired must act more or less as an obstacle to the elimination of the vapour which has already been absorbed—a circumstance which would seem of primary moment on every occasion where chloroform is exhibited.

ART. 91.—*On the Application of Indices to Aneurismal Clamps and other Pressure Instruments.*

By Mr. ERNEST HART, Ophthalmic Surgeon to  
St. Mary's Hospital.

(*Lancet*, December 19, 1863.)

The marked want of success which has attended the use of clamps and tourniquets in this country, as applied for the cure of aneurism, especially popliteal, by indirect pressure on the femoral, had become very evident to Mr. Hart in collecting published cases, and comparing the results in English hospitals with those which had been obtained by the Irish surgeons, who felt for this method of treatment all the interest which parentage could give. It was unnecessary to give figures or details for the purpose which he had in view; and he need only say that the analysis of the unsuccessful cases showed that the greater part had failed through the pain caused by the pressure, the ulceration or sloughing of the skin under the pad, or the extreme tediousness of the process, causing its abandonment as ineffectual, and recourse to the ligature of the main artery. Ligature after compression had failed to give less satisfactory results than primary ligature. In thirty-seven cases treated by English surgeons, in which it had been employed after compression had failed, there were fourteen deaths.

The sloughing, ulceration, and excessive pain, in a large number of the cases which he had mentioned, seemed to him to be the consequences of defective application of the pressure. To maintain continued and graduated pressure upon the femoral artery, even with any of the best compressors, without exerting too much on the one hand, and yet controlling the flow of blood on the other, was by no means easy, and required skilled and constant attention; and a certain amount of loving care was needed to prevent excess or defect. The most usual faults on the part of those entrusted by the hospital surgeon with watching the case were, employing an excess of pressure, or exerting pressure in a wrong direction; so that power was wasted in compressing muscles, and the artery was not fixed against the bone. The surgeon placed the pad carefully in position, but it must presently be relaxed, and then the assistants commonly erred in greater or less degree in reapplying the pressure.

The application of indices to the instruments is likely, Mr. Hart



thinks, to obviate much of this difficulty, and to remove prevalent causes of failure in instrumental compression. The surgeon, on putting the pads in position, could in each case ascertain for himself with what amount of pressure the femoral circulation could be stopped, or slackened, according as he might desire to produce the one or the other effect. Having determined the minimum force by which this could be effected, he could then inform his assistants, and point out to them the limits within which they must keep the pressure. If, in replacing the instrument subsequently, they found that the circulation was not controlled with that degree of pressure, they would know that the pad was not well placed; and instead of screwing down the clamp, and increasing the pressure until the pulsation was stopped, they would be careful to improve the direction of the pressure. It would be very useful for the surgeon himself to know what amount of pressure he was employing to stop the flow of blood; and it would be still more useful for the assistants to have under their eyes a constant monitor as to the correctness and care with which they were carrying out the surgeon's directions.

To give a long table of estimations of the degree of pressure in different subjects would not, Mr. Hart thinks, serve any useful purpose, as this would need to be ascertained for each particular case at the commencement of the treatment. He cites, however, the three following illustrations of the results of experiment on this point, as showing average figures for three typical subjects:—

CASE 1.—A. D., adult male, 5 ft. 7 in. high, somewhat emaciated after illness; measuring (at the level of the perineum) round the thigh 15 in., above the knee 12 in. Pulsation arrested at apex of Scarpa's triangle by a pressure of 7 lbs.; at Hunter's canal by a pressure of 8 lbs.

CASE 2.—J. B., adult male, 5 ft. 6 in. high, robust and powerful; measuring (at the level of the perineum) round the thigh 22 in., above the knee 14½ in. Pulsation arrested at apex of Scarpa's triangle by a pressure of 11 lbs.; at Hunter's canal by a pressure of 14 lbs.

CASE 3.—A. N., adult male, 5 ft. 4 in. high, of slight and feminine build; measuring round the thigh at the level of the perineum 20 in., above the knee 12½ in. Pulsation of femoral arrested at fold of groin by a pressure of 4 lbs.; at apex of Scarpa's triangle by 10 lbs.; at Hunter's canal by 11 lbs.

In the instrument made under the author's direction, by Messrs. Whicker and Blaise, the pressure is registered by a needle on a scale, and it is effected by a strong spring, which affords a pressure capable of nice gradation from four to twenty pounds. This instrument had already been tested in practice, and had worked well. Mr. Hart owed to the kindness of the Director-General of the Army Medical Department the report of a case in which it answered expectation in curing a popliteal aneurism. The analysis of cases showed that elastic pressure was best borne.

The principle involved in the application of indices was obviously one which might be applied with advantage to other instruments of pressure and extension in surgery; and he had adapted an index of a similar kind to pulleys for reducing dislocations. It might be useful to apply them to apparatus for overcoming fibrous ankylosis, and restoring bent and deformed limbs.

ART. 92.—*On the Use of Opium in the Treatment of Chronic Ulcers.*

By Mr. SKEY, Surgeon to St. Bartholomew's Hospital, &c.

(*Lancet*, January 2, 1864.)

The following passage is from a paper in which Mr. Skey reviews some of the more prominent cases which have occupied his wards in St. Bartholomew's Hospital during the past year. Mr. Skey says:—

"I have treated a large number of these affections, and with success. The more chronic the ulcer the larger its size, the more aged the subject the more remarkable is the influence of opium in effecting its cure. Let a case be selected for experiment of some twenty years' duration, which has exhausted the patience of various medical attendants, as well as the remedies employed by them for its cure. Treat such a case of chronic ulcer of the largest size, having a pale flat bloodless base, a high mound of lymph around it covered by unhealthy integument, the sore pouring out a large quantity of watery ichor, saturating the linen, stockings, and other appliances—I say select such a case occurring in old age; give such a man ten or fifteen drops of tincture of opium night and morning, leave his bowels alone, and observe the base of the sore in five or six days: it will exhibit a number of minute red points, which, daily increasing in number, will rise up in the form and identity of healthy granulations, and cover the entire surface of the ulcer. Contemporaneously with the gradual elevation of the base of the ulcer is the descent of the surrounding eminence and the commencement of the process of cicatrization. If I desired to select an ulcer on behalf of a student, with a view to illustrate the character of perfect granulations as they appear in a thoroughly healthy example, I would select an ulcer which had been treated by opium in preference to any other. If it be supposed by any man having a limited experience in the employment of opium that any evil to the constitution attaches to the use of that valuable agent, I can only reply, that its salutary action on the ulcer is obtained solely through the healthy influence it exercises on the constitution. Judiciously employed, no drug in our Pharmacopœia is more innocuous."

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ART. 93.—*On the Treatment of Gunshot Wounds of the Chest by "Hermetically Sealing."*

By Deputy-Inspector-General LONGMORE, Professor of Military Surgery, Army Medical School.

(*Lancet*, January 2, 1864.)

A plan of treating chest wounds has been lately brought under notice in the *American Medical Times*, by Dr. B. Howard, of the United

States Army, which is called by its author the "treatment by hermetically sealing;" and the editor states it to be understood that at the next engagement of the army of the Potomac an hospital is to be organized, under charge of Dr. Howard, for the sole purpose of treating gunshot wounds of the chest by the sealing process. Dr. Howard advocates the propriety of this treatment for all penetrating wounds of the chest by gunshot. He also describes it to be applicable to penetrating wounds of the abdomen, whether made by gunshot or stabbing instruments.

The following is a description, in Dr. Howard's own words, of the manner in which the operation of hermetically sealing is to be practised:—

"All accessible foreign bodies having been removed, introduce the point of a sharp-pointed bistoury perpendicularly to the surface just beyond the contused portion, and with a sawing motion, pare the entire circumference of the wound, converting it into a simple incised wound of an elliptical form. Dissect away all the injured parts down to the ribs, then bring the edges of the wound together with silver sutures, deeply inserted, at not more than a quarter of an inch apart; secure them by twisting the ends, which are then cut off short and turned down out of the way. Carefully dry the surface, and with a camel's-hair pencil apply a free coating of collodion over the wound; let it dry, and repeat it at discretion.

"For greater security, shreds of charpie may now be arranged crosswise over the wound, after the manner of warp and woof; saturate it with collodion, and when dry repeat the process, until the wound is securely cemented over. As a still greater protection, a dossil of lint may then be placed over the part and retained with adhesive straps.

"If there be a tendency to undue heat in the part, it may be kept down with cold affusion; should any loosening of the dressing occur, an additional coating of collodion may be applied. The sutures must not be removed until healing by first intention is complete.

"Should suppuration occur, so as to occasion distressing dyspnœa, proceed to treat it in all respects as a case of empyema, introducing the trocar at the most dependent point, and taking special care to avoid the admission of air."

Dr. Howard describes particularly three advantages which are gained by this perfect closure of the wound. 1st. Hæmorrhage is controlled. At the worst, he says, the amount of blood lost after the operation cannot be more than would suffice to fill up the unoccupied space remaining in the plural cavity; the elastic clot resulting furnishing a styptic *par excellence* for the wounded vessels of the yielding lung. 2nd. Dyspnœa is immediately relieved upon removal of the atmospheric pressure. 3rd. Suppuration, if not prevented, is greatly diminished by shutting out the constantly renewed currents of atmospheric air, and its character is very favourably modified. "Indeed, if the wound were closed soon enough," says Dr. Howard, "I deem it possible that the slough of the track through the lung, with the limited amount of attendant pus, might be entirely disposed of by absorption and expectoration."

As a proof of the successful results of the sealing plan of treatment, Dr. Howard mentions that some cases upon which he operated were six days in the ambulances before reaching a general hospital, part of the road travelled over being of the worst description, and that on the fifth day all but one of these so treated were able to walk comfortably.

What Professor Longmore says of the three advantages which Dr. Howard advocates for the hermetically-sealing treatment in gunshot wounds will show sufficiently what he thinks of this mode of procedure.

"*Hæmorrhage* Dr. Howard rightly places first amongst the causes of fatality. It is the symptom which of all others alarms the surgeon; for he cannot but feel how much the power of nature to arrest the flow of blood, and how much the result of his own endeavours to aid nature in her efforts, must depend upon accidental circumstances connected with the course of the projectile and the injuries it has inflicted, which it is entirely out of his power to control. The track of the bullet is out of sight: the injury it has done to the lung is out of reach. It may be judged that vessels of the largest size have not been divided as it traversed the viscus, or death would have been nearly instantaneous: a surmise may even be made of the part of the lung wounded by the situation of the aperture of entrance, or, if two openings exist, by a supposed line connecting them. But such surmises are often proved to be erroneous by post-mortem inspection: even the source of the hæmorrhage, whether it be wholly pulmonic, or wholly parietal, or the two combined, cannot be diagnosed with certainty in these complicated wounds. It is not to be wondered at, then, that under such circumstances of doubt and consciousness of helplessness, surgeons, though recognising the differences between a gunshot and an incised wound of a lung, should nevertheless, almost instinctively, stop the gap through which the life-blood of the patient is seen to be flowing. Although the surfaces of the wound in the lung cannot be brought into contact and coaptation, there is still the hope that as the blood accumulates within the pleura it may exert such a pressure upon the wounded lung, and perhaps so plug up the mouths of the open vessels, as to stay the flow of blood and procure time for the saving processes of nature and the application of remedial measures on the part of the surgeon that may lead to the recovery of the patient. And the most experienced army surgeons have long recommended this course under circumstances of gunshot wounds *with profuse hæmorrhage*. 'Hermetically sealing,' thus applied, is only a new term: the practice is not new. Immediate closure of the wound is, at the present day, the general practice of all surgeons in such cases. The difference in the treatment between the practice of *closure* and *hermetically sealing* is, that in the one no attempt is made to obtain healing of the wound by the first intention, which it is not expected can be obtained in openings made by gunshot; and secondly, that the continuation of the closure is made subject to other contingencies which are not unlikely to follow the injury. It frequently happens in such cases that the flow of blood, after the closure, is not arrested

until the accumulation on the wounded side is so great that the pressure exerted upon the heart and sound lung is strong enough to threaten death from asphyxia. It is manifest under such circumstances that the wound cannot be kept hermetically sealed; it must be reopened, some of the effused blood allowed to escape, and there still remains the hope that the weakened state of the circulation, and the usual condition consequent on loss of much blood, with the aid of proper remedial measures, may favour the prevention of further hæmorrhage. If we persist, under these circumstances, in maintaining the hermetically sealing of the chest,—if Dr. Howard's injunction that the sutures are not to be removed until healing by the first intention is complete, is attempted to be carried out,—I fear the risk will be run of causing the death of the patient by suffocation.

"*Dyspnœa* is a symptom which may depend on several causes. It may be induced by the very circumstance I have just described, after closure of the wound—viz., continued hæmorrhage and accumulation of blood in the cavity of the chest, and sealing will not then afford relief; if it depend upon the interference with natural respiration such as has been described to exist in incised wounds of the lung, hermetically sealing might afford relief, if there were no complication and the sealing could be maintained long enough. This continued sealing, however, it is believed, the circumstances connected with the discharges, and other consequences of gunshot wounds, will not admit of. But supposing that, for the relief of this symptom, the chest has been hermetically sealed, an irregularly-torn lung, or a lung with the open track of a ball through it, will almost certainly give rise to pneumothorax, and the continued escape of air into the cavity will cause such compression on all the contents of the chest as to aggravate the dyspnœa extremely, and cause imminent danger to life from suffocation. In such a case, again, the wound must be reopened, or another opening practised by the trocar, to afford relief.

"Lastly, Dr. Howard advances that *suppuration* is greatly diminished, if not prevented, by shutting out external air. This is, doubtless, the case with incised wounds, but can we expect it to be with penetrating gunshot wounds? An uncomplicated wound of this kind, without hæmorrhage, without lodgment of foreign bodies, is unfortunately rare indeed, and such complications can scarcely fail but lead to pleuritic effusion and empyema. If the hæmorrhage be slight, the blood may be absorbed, but if it be in its usual quantity and not evacuated, it will irritate the serous sac, and produce the same effects as other foreign bodies. Mr. Guthrie's experience in the Peninsula War led him to state, that in cases in which there was not a free communication between the wound in the parietes and the cavity of the chest, pleuritic effusion was the principal danger to be feared. 'When the external wound,' Mr. Guthrie says, 'has been closed, or is so partially closed as not to allow the escape of the effused fluid, it is commonly the immediate cause of the death of the patient. Its secretion and early evacuation

are, therefore, the most important points to be attended to in wounds of the chest.'

"I have thought it right to consider this subject at some length because I fear, if penetrating gunshot wounds of the chest are treated indiscriminately by hermetically sealing the external wound or wounds, a fatal termination will be induced in some cases which might terminate otherwise under the more ordinary methods of treatment. But if my fears in this respect should be proved to be groundless, and practice shall bring to light an improved method of treating these serious injuries, military surgery will be greatly indebted to its author; for it is undoubtedly unhappily most true that hitherto, in all campaigns, the proportion of fatality in really penetrating and perforating wounds of the chest has always been excessively large."

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ART. 94.—*A New Operation for Obtaining Union of an Ununited Fracture.*

By Mr. L. R. BICKERSTETH.

(*Medical Times and Gazette*, March 19, 1864.)

Mr. Bickersteth's suggestions, which are of singular interest, were submitted to the Royal Medical and Chirurgical Society. He stated that he had frequently tried, in vain, friction, acupuncture, and subcutaneous division; and though resection of the ends of the bone had been successful in some instances, it was a proceeding involving a considerable risk to life. Dieffenbach's method had proved to be more successful; but this operation, though conducive to the formation of new bone, in no way provided for what was of paramount importance, viz., absolute immobility of the opposing fragments. The large external wound and injury done to the soft parts in introducing the ivory pegs, were also objections to this operation. Recognising the happy influence of Dieffenbach's plan of exciting ossific deposit, and at the same time feeling the importance of keeping the ends of the bone in a condition of absolute immobility, the author was induced to try a modification of the operation, and in the case of a man admitted under his care, at the Liverpool Royal Infirmary, with an ununited fracture of the radius, he drilled a hole through the ends of both fragments, and passing a stout wire through it, secured the bone in perfect apposition. Union took place in seven or eight weeks, but on endeavouring to remove the wire so much traction was necessary that it caused the fracture again to be ununited. The difficulty of removing the wire induced the author to think of some other plan not open to this objection, and in the case of a man with an ununited fracture of the thigh, by means of a common Archimedean drill, he bored two holes in such directions that each passed obliquely through both ends of the fractured bone, and into each introduced a steel rod with a screw at the end. To do this it was necessary to make an incision three inches

in length. Much constitutional disturbance followed, the wound suppurating freely. In ten weeks the splints were removed, but no union had taken place. The limb was then confined in gum and chalk bandages. Symptoms of pleuro-pneumonia came on, and he gradually sank. A post-mortem examination showed tubercular deposit in the ends of the bone and other parts of the body. There was no attempt at repair at the seat of fracture, except where the drills had pierced the bone, and here there was a deposit of new bone. This proceeding showed that it was quite feasible to fix the bone in the manner described without exciting too much inflammatory action; and also that the steel rods caused the formation of new bone. The next case was a fracture of the lower maxilla, where the bones had united in such a position as to render the patient a most unsightly object. As the incision that would be necessary in this instance for the purpose both of putting the bone into proper position and removing the deformity of the soft parts, would not allow the use of external splints or supports, and as it was found impracticable to effect this object by fixing the teeth by an appliance within the mouth, it was absolutely necessary that some means should be devised by which the divided portions of the jaw could be securely fixed; and it occurred to the author that pegs or nails would answer the purpose, especially as he had already observed their presence caused so little inconvenience. Accordingly, at the operation, the plan just mentioned was carried out, and the apposition of the fractured portions was secured by means of two round-headed nails. They most effectually answered their purpose, and no external splint or bandage was required. The case did well, no undue action being set up. On the twenty-second day after the operation one of the nails came away. The patient left the infirmary perfectly well, the jaw being firmly united in its proper position, and the deformity of the soft parts removed. One of the nails still remained in; and the last account states that its presence caused no inconvenience. The third case recorded was one that presented many points in common with the one just narrated. No external incision was made, and ordinary drill-heads were substituted for nails. The result was everything that the author could have wished. These cases show how readily and with what good effect fractured bones may be fastened together. Surgeons have ever recognised the use of sutures with regard to the soft parts. Why should we not, in cases of difficulty arising from an inability to keep the surfaces in proper apposition, adopt the same plan with the bones? Might not this process be applicable in some cases where division of the tendo Achillis is required, or where such an operation as sawing off the ends of the bone is indicated? From a consideration of the cases narrated, Mr. Bickersteth proposes to treat an ununited fracture by passing one or more drills through the broken ends of the bone in such a manner as to secure their perfect immobility, and without making any external wound beyond that caused by the entrance of the drill. The limb should then be secured by properly-adjusted splints, and kept at perfect rest. After two or three weeks the drills may be

removed, and water-dressing applied to the punctures. For several weeks after it would, of course, be desirable to continue the use of the splints. In conclusion, the author relates three cases of un-united fracture successfully treated by his friend Mr. Fletcher, on the plan described in this paper.

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ART. 95.—*On Fractures and Dislocations.*

. By MR. SKEY, President of the Royal College of Surgeons,  
and Surgeon to St. Bartholomew's Hospital.

(*Lancet*, January 9, 1864.)

Mr. Skey has placed on record the following clinical notes of his hospital practice during the past year :—

"Of fractures of the thigh, nearly all were treated with the long splint. Two cases, complicated with injuries of the head, united with loss of length of the limb,—to the extent of three inches in one case, and two inches in another,—I refractured the femur in both cases at the expiration of eleven weeks in one case, and ten in the other. In both the union was firm at the time of refracture. In both instances the original length was restored, and the recoveries were complete. Fractures of the leg I have treated, almost without exception, with the pillow, instead of splints. In all, except in cases of extreme obliquity of the fracture, the pillow, bound firmly round the leg by three or four straps, effects perfect union without overlapping, and is by far the most simple and easy method of applying the required lateral pressure to the limb with which I am acquainted. It produces neither abrasion nor irritation of the skin, and no discomfort from undue pressure.

"The most severe case of compound fracture I treated within the year occurred in the person of a rather robust man of thirty-five years of age, who, in consequence of his house being on fire, jumped from the window of the second floor to the ground. He had a compound fracture of the right tibia, about half-way down; a simple fracture of the same bone lower down, extending into the ankle-joint; a compound fracture of the left tibia; and simple fracture of the two bones, also probably extending into the ankle-joint. About one-third of the distance from the heel to the toes, on the inner side of each foot and in the direction of the internal plantar artery, were two deeply-punctured wounds. The idea raised by these wounds was that the man had fallen on pointed spikes; but, on examining the soles of the boots he had worn, not a vestige of lesion was found in them. From each of these plantar wounds blood flowed very freely, and continued to flow for many hours, in spite of pressure and other means adopted to arrest it. His face, and both hands and wrists, were so severely burnt as to warrant his admission into the hospital had he sustained no other injury. My first idea was to amputate the right leg, and 'put up' the left; but, on examining



the left, the injury was nearly as formidable as on the right side, and, after some deliberation, I determined to make an effort to preserve both. It seemed not unreasonable to suppose that if a man's constitutional powers were sufficient to carry him through the consequences of a compound fracture and a stump, they might suffice for two compound fractures, and that little would, therefore, be gained by the amputation of either leg; whereas it would be more consonant with high-class surgery to retain both limbs. The man's condition, both physical and moral, justified the decision. He was in early middle age, remarkably healthy, and had been all but entirely abstinent from wine and spirits. In temper he was remarkably calm, placid, and contented. Both limbs were placed in splints, and the man was most carefully watched. Great prostration resulted from the injuries he had received, and for some weeks we despaired of his rallying. Brandy was administered freely, at first from hour to hour, and then at longer intervals. For the first month he consumed from one pint to a pint and a half daily. His recovery was complete after occupying a bed for eight months in the hospital.

"I admitted into the hospital a stout man with fractured ribs, attended by emphysema on a larger scale than I had ever before witnessed. It extended from the crown of his head to the soles of his feet, and also along each arm to his hands. The penis and scrotum were largely distended with air. As the man exhibited no symptom of suffering or oppression, I was content only to watch him. The air gradually disappeared from every region except the scrotum in about ten days, the degree of distension of which appeared to undergo no change. I punctured the scrotum about the fifteenth day, and the air escaped with a sudden rush. The man perfectly recovered.

"I may include under the head of fractures three cases of probable fracture of the basis of the skull. In each case there was bleeding from the ear following a severe fall, total insensibility, stertorous respiration, coma, and labouring pulse. In one case bleeding also occurred from the nose and mouth. In each the treatment was absolutely negative. The patients were watched, fed, and cleansed. Some amount of consciousness returned in one of them about the fifth day, and later in the other two. In two of the cases the recovery was complete; in the third, at the expiration of several weeks the recovery was incomplete.

"Of dislocations I have had during the year an ample share, but I have no remarkable example of variety to record, except a very interesting case of dislocation of the left os innominatum in the person of a young man, attended with paralysis of the left lower extremity. The injury was the consequence of a severe fall from a height. The pelvis appeared as though twisted; the os innominatum projected backwards beyond the line of its attachment to the sacrum, and it was firmly fixed in its new position. The ligaments at the symphysis pubis must almost necessarily have been elongated, and possibly torn. I made an attempt to restore the bone by extending the leg, but it occasioned considerable pain, and proved inoperative for good. At the expiration of a week I put the man under the

influence of chloroform, and by means of pulleys drew the dislocated bone into its natural position. The paralysis instantly subsided, and the man moved his leg gently, and without difficulty or pain. He recovered."

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ART. 96.—*On the Importance of Tapping the Joints and Bursæ Mucosæ.*

By Dr. INZANI.

(*Omodei Annali*; and *Brit. and For. Med.-Chir. Review*, Oct., 1863.)

Dr. Inzani, of Parma, asserts the perfect harmlessness of puncturing a distended joint, even during the progress of acute inflammation. The fear of bad consequences following from the wound of the tendinous structures is a mere imagination of the ancients; nor does the air ever appear to make its entrance. The puncture may be made with a trocar or a lancet; the latter is preferable for superficial joints. The author has operated very frequently on the knee, several times on the elbow, occasionally on the carpus and ankle, and once only on the hip: no bad consequences ever followed. Pressure by means of a starched bandage should be made, and when the synovial sac refills it should be again punctured before the distension has advanced too far. In this way a radical cure may be obtained. Examples are given in which large joints, principally the knee, were opened for effusions of blood, of serum in acute inflammation, of serum in chronic inflammation, and of pus—usually with a successful result. But paracentesis should be avoided where the skin is much thinned and ulceration seems impending. In the synovial bursæ, paracentesis has given equally good results. The examples which are given are those of effusion in the sheaths of tendons after accident (as the peronæi in sprains of the foot, the extensors of the thumb in falls on the hand), in which a puncture will give exit to synovial fluid mixed with blood, with much relief to the pain and abbreviation of the course of the disease. The author believes that by these punctures chronic synovitis may often be arrested in cases which, treated by ordinary methods, would end in "white swelling," and that in dropsy of the joint the treatment by repeated puncture and pressure is as effectual and more safe than by injections.

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ART. 97.—*On Quinine as a Local Antiseptic.*

By Dr. R. GIESELER.

(*Archiv f. Klin. Chirurg.*, Bd. iv. Ht. 3, 1863; and *Brit. Med. Journal*, January 23, 1864.)

Dr. R. Gieseler has been led to adopt the use of quinine as a local antiseptic. From experiments which he made he found that the

preservative property exerted on fresh meat by pure quinine (not the sulphate only) was greater than that of many other substances, including even cinchona. He therefore determined to apply quinine in surgical cases; and his first case was one of extensive carbuncular inflammation in a man aged twenty-five. The whole of the lower half of the left calf, including the upper third of the tendo Achillis, was in a gangrenous state, which threatened to extend round the limb. At the upper part the soft structures were destroyed to the depth of about an inch, and the tendinous portions of the gastrocnemius were being thrown off in shreds, with ichorous discharge. The fibres of the tendo Achillis, where diseased, appeared as if macerated, and the edges of the whole tendon were undermined. The leg was much enlarged, its skin had a bluish-red colour, and the soft parts were indurated. The diseased parts exhaled a most offensive smell, filling the small room in which the patient lay. He kept the knee flexed, so that the leg rested on the thigh; and it was scarcely possible to bring the limb even to a right-angle. The patient suffered continuous pain in the whole leg, and especially in the foot; he had loss of appetite, fever, and profuse sweats. The disease had commenced four weeks previously as a very tender black spot on the skin, and had been treated by the practitioner called to the case by warm applications, and, after the separation of the slough, by ointment of nitrate of silver, and subsequently by oil of turpentine and by myrrh ointment. The gangrene, however, spread in depth and in circumference. Dr. Gieseler first endeavoured to improve the patient's health by tonics, especially cinchona; and, as applications to the limb, he employed affusions and bandages soaked in a strong decoction of poppy-heads with opium. As no improvement was produced by the continuance of this treatment during eight days, he determined, as a last resource before performing amputation, to try the effect of the local application of quinine. Accordingly, a solution of this substance was applied in compresses over the entire gangrenous parts, the whole being covered in with warm poultices. During the first week the internal remedies were continued. In the course of the first day the pain abated, and the patient passed a tolerably quiet night. A change in the appearance of the parts could not naturally be at once expected; but the separation of the dead parts took place very gradually. At the end of three weeks the separation was complete at the upper part, and healthy granulation was commencing; the diseased portions of the tendo Achillis were not thrown off until a later period. The process of cicatrization went on favourably, and was complete three months after the patient first came under Dr. Gieseler's care. The man ultimately recovered the perfect use of his leg. Dr. Gieseler says that on several occasions, for the sake of experiment, he omitted the quinine, and used warm applications only; the result always was, that the pain was renewed.

The next case related is one of noma, occurring in a child three years old. Dr. Gieseler was called to this patient on account of an ulcer at the right corner of the mouth; this was, however, found to

be connected with gangrenous disease of the cheek, which was much infiltrated, and, although the skin was unaffected, gave on examination signs of being destroyed in its entire thickness. When Dr. Gieseler attempted to raise the lip carefully, for the purpose of examining its inner surface, laceration of it near its middle and of the right ala nasi took place without hæmorrhage, and showed these parts, as well as the external surface of the alveolar border of the upper jaw, to have been changed into a gangrenous mass, having an offensive smell. The thickly-infiltrated gangrenous parts were removed by incisions made from the laceration already described upwards to the infraorbital process, and thence obliquely downwards and to the right. No hæmorrhage took place. To the exposed dirty-grey anterior surface of the upper jaw, in which no trace of organization was apparent, Dr. Gieseler applied a sponge soaked in a solution of sulphate of quinine, over which he laid some wadding, and secured the whole with a bandage. The right nostril was kept open by means of a piece of sponge, also soaked in quinine solution. On the next day a dark-brown border, a line in width, had formed at the inner and upper part (near the canine fossa) where it was found the sponge had not rested; but there was no extension of the gangrene elsewhere. The applications were renewed every few hours, the parts being carefully cleansed by affusion on each occasion. Healthy granulations appeared at the edges of the wound on the second day. Even at this time, when the process of separation first commenced at the centre of the exposed surface, the offensive smell had ceased; and neither then, nor subsequently, did the child appear depressed, but took its food readily and played as usual, although confined to bed. No internal remedies were given except an occasional mild aperient, when indicated. The child was first seen on October 9th, and on November 11th the process of cicatrization was complete, leaving the parts in so satisfactory a state that a trifling plastic operation alone was required to remedy the defect that remained.

Dr. Gieseler has used in some cases of bed-sores an ointment of quinine (the sulphate being first dissolved in a few drops of water and then mixed with lard); and has found a quinine gargle useful in some cases of diphtheritic throat-ulcer. In young children the remedy must be applied by means of a camel's-hair brush: and the use of the same means of application is also indicated for other parts, such as the cornea and uterus.

Quinine is also useful as a local application in the after-treatment of plastic operations, which sometimes fail through death of the transplanted parts. It is, however, perhaps advisable to scarify these, so as to allow of the action of the quinine. The following case is given:—On June 27th Dr. Gieseler saw a little girl, aged six years, who had undergone a remarkable injury of the left hand in attempting to swing herself to a loaded cart. The nature of the injury was such that the integument was stripped from the entire palm of the hand, from the wrist to the fingers, and the flap remained connected at the finger-joints. The flap was replaced, and, to keep it properly extended, sutures were applied; the limb was

laid in a lukewarm-water bath, and was subsequently dressed with solution of quinine. On July 4th the corners of the flap—making altogether about one-third—had become separated, but without any gangrenous odour. The remaining part spontaneously divided into three strips. On July 17th these had become firmly adherent, and the hand was placed in the extended position on a splint. At the end of this month the wound was entirely healed; there was but slight contraction of the cicatrix, and the child recovered the perfect use of her hand.

In caries and necrosis also Dr. Gieseler, after performing the necessary operations, applies quinine locally, and believes it to be useful. This, however, he says is open to further inquiry, as the successful result in many cases may be dependent on the constitution of the patient. It is suggested also, that the local application of quinine may be useful in the sloughing of malignant tumours. Dr. Gieseler, however, has no experience to bring forward on this point.

ART. 98.—*On Vascular Tumours seated in Muscular Tissue.*

By MR. CAMPBELL DE MORGAN, Surgeon to the  
Middlesex Hospital, &c.

(*Medico-Chirurgical Review*, January, 1864.)

With the exception of a case described by Liston, and one brought not long ago to the Pathological Society by Dr. Buchanan, no case of true vascular tumour seated in muscle appears to have been described in this country; and there is no reason to believe that the records of surgery and pathology are more meagre here than elsewhere. In this paper the author gives two cases which fell under his own notice, and brings together all the information which is necessary to enable one to arrive at sound conclusions on this subject. The cases are these:—

CASE 1.—Ruth Edwards, a healthy girl of ten years of age, was sent to the hospital by Mr. Yate, of Godalming, to be treated for a tumour in the left leg. It was situated in the calf, its upper border lying just below the popliteal space, and was about the size and form of a small hen's egg. It was not moveable upon the surrounding parts, but seemed bound down beneath the fascia. After standing or walking for a short time she suffered pain in the part, and pain was brought on by handling the tumour, but there was no tenderness. When she lay down, the swelling became much less prominent, and its boundaries could not be readily defined; it became still more indistinct if while she was lying down the leg was raised or the tumour kneaded and pressed upon, or if the leg was flexed; indeed, in this position it was not easy to make out the tumour at all. When she was standing up, the tumour was very prominent and tense, and its limits were clearly marked. The leg then measured  $10\frac{1}{4}$  inches in circumference, and was  $\frac{1}{2}$  of an inch more than the other limb. On her lying down it was reduced to  $9\frac{3}{4}$  inches, and after pressing on the tumour or raising the leg, to  $9\frac{1}{2}$  inches. No pulsation could be detected under any circumstances, nor was there any thrill or bruit distinguishable on auscultation. The

anterior and posterior tibial arteries pulsed normally; there was nothing unusual in the condition of the skin, and the temperature of the part was not raised.

The only history that could be got was that her mother told her she had had a lump in the leg from the time of her birth; that she had run about and gone to school with little or no inconvenience until within the last few months, when the swelling became larger and more painful; and that she was in consequence unable to go to school or do any work.

Taking all the circumstances into account, the only conclusion seemed to be, that this was a vascular or erectile tumour, unconnected with the skin or subcutaneous tissue, but lying beneath the fascia, and perhaps in the muscular tissue. Its clearly-defined borders indicated that it was not a mass of erectile tissue imbedded in and merging into the muscular structure, but that it had its own proper boundary. That it was not connected with any large arterial trunk was shown by the entire absence of sound or thrill, and by the natural beat of the arteries below it.

She was admitted February 10th, 1863, and the tumour was removed on February 18th. A vertical incision three inches long was made directly over the long axis of the tumour. On slitting up the fascia to the same extent, the tumour was seen covered by an extremely thin layer of the fibres of the gastrocnemius. This was dissected off, and the body of the tumour was then readily enucleated. At its upper end it tapered off into a fibrous cord, which ran up to the popliteal space. This cord was traced up for some little distance, and then cut across. A somewhat similar mode of termination existed at the lower end. There was no hæmorrhage during any part of the operation. The wound was closed by metallic sutures, and united for the most part by first intention. The patient was discharged March 3rd.

My colleague, Mr. Hulke, was kind enough to make a careful examination of the tumour, and has given me the following account of it:—"The tumour is of a flattened oval shape, two inches by one in diameter; the outer, less convex than the inner surface, has some shreds of muscular fibre adherent to it. A section in the long axis of the tumour shows patches of cavernous, interspersed with yellowish-fatty and greyish-fibrous tissue, amongst which are some elastic fibres. In accordance with this difference of composition, the density of the tumour varies from sponginess to great firmness. The tougher greyish parts, which to the unaided eye appear to be fibrous, are found to contain much fatty and a small quantity of muscular tissue, particularly near the outer surface of the tumour. The primitive muscular fibres are scattered and separated by adipose tissue, and from the indistinctness of their markings and granular opacity are evidently undergoing a process of atrophy. The cavernous portions consist of cavities of various sizes, the largest about the size of a No. 4 shot, separated by partitions of fibrous tissue, with elongated nuclei. Some of the cavities contain coagula of various ages; others are empty, and some receive buds from the fibrous partitions or meshwork; these have rounded ends, and appear to be outgrowths. The cavities or sinuses have no proper walls or coats, but are interspaces in the partition or framework. I could not recognise any structures like those proper to arteries or veins of the same dimensions. The cavernous tissue is not, then, a simple hypertrophy of the vessels of the part in which the tumour is situated, but is a new formation."

It may be mentioned that numerous phleboliths about the size of small pins' heads were found imbedded in different parts of the tumour. This is noteworthy, as Cruveilhier states that, except in one case, which also involved the muscular tissue, he never saw phleboliths in accidental erectile tissue, though they are frequently found in true varices.

The diagnosis in this case was not difficult. When the parts were relaxed, the characters were those of a soft fatty tumour. When the patient stood up and the parts were tense, the tumour might have been taken for a tense thick-walled cyst; but the fact of its being congenital, the varying size in different positions of the limb, and the readiness with which it was partially emptied when pressed upon, and refilled when the pressure was taken away, while no enlargement took place elsewhere when its contents were forced out, were conclusive indications enough of the real nature of the tumour. The absence of all pulsation or thrill showed that it was not directly connected with the large arteries. The preparation is in the museum of the hospital.

CASE 2.—Some years ago I removed a similar tumour from the thigh of a middle-aged woman. For many years she had had, at times, inconvenience and dull pain. The pain had latterly become so wearing that she applied for relief at the hospital. There was found to be a swelling lying very deep amongst the muscles of the thigh, so deep that it was impossible to make out its characters, especially as the thigh was fleshy and well covered with fat. It did not appear larger than a small walnut. It was situated about the middle of the front of the thigh. She was very anxious to have it removed, and although its nature was obscure the operation was performed. In order to reach it, it was necessary to turn aside the sartorius, and to cut through the fibres of the rectus, in the posterior part of which it was imbedded. There was no hæmorrhage. It proved to be a small tumour of mixed erectile and fibrous tissue, with a fibrous investment separating it from the muscle in which it lay. The specimen is in the museum of the Middlesex Hospital. It has been recently examined, and as in the other tumour, muscular fibres, more or less degenerated, have been discovered in its tissue.

There are, Mr. Campbell de Morgan considers, three forms under which vascular tumours are found in muscle:—1. Tumours having the appearance of a varicose state of the veins, unconnected with the muscular tissue in which they lie, but yet not isolated by any well-defined covering of connective tissue. 2. Erectile tissue, forming in, and encroaching on, the muscular tissue, from which it is not separated by any defined boundary. 3. Erectile tissue, forming a defined tumour, having an investment of connective tissue, not continuous with the muscular tissue in which it is imbedded.

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ART. 99.—*On the Treatment of Anthrax by Pressure.*

By Dr. PHILIP C. SMYLY, Surgeon to the Meath Hospital.

(*Dublin Medical Press*, May 4, 1864.)

"Nélaton and Dr. O'Ferrall," says Dr. Smyly, "direct that pressure should be made round the base of the swelling; the first giving as the object to be attained, 'to evacuate the pus and all the pulpy matter which forms the slough;' the latter, 'to maintain and promote capillary circulation;' and Mr. Collis receives Dr. O'Ferrall's explanation as the best.

"The effect of pressure, I believe, is more than these. It undoubtedly evacuates the pus and slough; for squeeze the anthrax ever so well, if the plaster be properly applied, a drop of pus will

be squeezed out when the straps are drawn tight. It may support, maintain, and promote capillary circulation, but the essential action of the pressure is to *check cell development*, to prevent the overgrowth of new formation which has not vitality sufficient to form tissue, but aborts and forms pus. Pressure, by preventing the formation of these cells, removes the necessity for the increased supply of nutritive matter, and removes the hyperæmia, establishing the converse of Hunter's aphorism, 'Remove the necessity for increased support, and the supply will be cut off.' That this is the case is established by the observation of the results of cases. When the pressure is applied early, the loss of substance is very slight. The slough is pressed out, the destructive formation of cells is prevented by the pressure, and the cavity fills up by the moderated growth of cells which constitutes granulation.

"From the passages I have quoted from Simon's article in Holmes' 'Surgery,' it will be seen that if anything be absorbed it is the new formation before it becomes pus; for when it is pus, then it is in that part of the anthrax nearest the opening, through which it can escape freely. Further, Virchow says (translated by Dr. Chance, p. 184): 'Ultimately the question is always this, how far a lymphatic vessel filled with pus is capable of effecting an evacuation of its contents into the circulating stream of blood and producing a genuine pyæmia? The possibility of such an occurrence must, as a rule, be denied, and indeed for a very simple reason.' 'In all, interruptions are formed by lymphatic glands. . . . It is manifest that no pus-corpuscle can pass a gland.'

"Virchow says, again, page 183: 'There is, however, certainly one case in which pus in substance may become the object, not exactly of a reabsorption, but at any rate of an intravasation, and where this intravasated pus may circulate within the vessels—I mean the case in which a vessel receives a wound, or is perforated, and pus passes through the opening into its interior.'

"If cellular pathology be true, *is not pressure the rational mode of treatment?*

"If Virchow's statement be true, that there be but the one way in which pus can get into the circulation, is not the crucial incision *the most certain way of producing a true pyæmia?*"

## SECT. II.—SPECIAL QUESTIONS IN SURGERY.

### (A) CONCERNING THE HEAD AND NECK.

ART. 100.—*Glaucoma, and its Cure by Iridectomy; being Four Lectures delivered at the Middlesex Hospital.*

By MR. J. SOELBERG WELLS, Ophthalmic Surgeon to, and Lecturer at, the Hospital.

(London: Churchill, 1864. 8vo. pp. 86.)

These lectures are intended to supply the want of a short and practical treatise, embodying an account of the modern doctrine of



glaucoma. They serve admirably the object of their publication. The author has made them as practical as possible. He touches but lightly upon theoretical questions still *sub judice*, but bestows great attention upon the symptoms which the disease may exhibit in its different stages, the prognosis which may be given of the beneficial effects of iridectomy, and the method of performing this operation. We quote the following brief account of the history of glaucoma from the first lecture:—

“The term glaucoma was applied by Hippocrates to all opacities situated behind the pupil. After a time it was confined to those which presented a green appearance, the nature of which was not, however, understood, although the fact was recognised that such green opacities were not curable by operations. By some, the seat of the affection was supposed to be in the vitreous, by others, in the retina and optic nerve. At a later period it was thought that glaucoma was due to a peculiar inflammation of the choroid, which occurred most frequently in gouty persons; hence it was termed arthritic ophthalmia, a name still retained by some writers. Lawrence considered that the symptoms of glaucoma were caused by an affection of the retina and choroid. Weller gave a most excellent and graphic description of the symptoms of glaucoma, including in it many of the principal and most important points, *e.g.*, the intermitting course of the disease, the sluggishness and dilatation of the pupil, the circumorbital pain, the rainbows round a candle, &c. He also made mention of the tenseness of the eyeball, but Mackenzie first pointed out (in 1830) the importance of the latter symptom.

“In 1851 Helmholtz discovered the ophthalmoscope, which has proved of such incalculable value in diseases of the eye, and has so completely revolutionized ophthalmic surgery. The first results of the ophthalmoscopic examination of cases of glaucoma were negative; soon, however, it was ascertained that there always existed a peculiar alteration in the optic disc in all cases of well-marked glaucoma. In 1854 Edward Jäger gave an excellent illustration of the ophthalmoscopic appearances of the optic nerve entrance in a case of glaucoma, showing the peculiar displacement of the vessels at the edge of the disc, the slight rim surrounding the latter, &c. It was, however, reserved for the great genius of von Graefe to unite these various and disjointed links of the chain of symptoms presented by glaucoma, and, welding them into one connected whole, not only to found the modern doctrine of glaucoma, but at the same time to bless humanity with a cure for this hitherto irremediable disease. Soon after Jäger's delineation of the ophthalmoscopic appearances of the optic disc, von Graefe described these peculiar appearances still more accurately, and at the same time pointed out a most important fact, *viz.*, that an arterial pulsation exists in the optic nerve in glaucoma, being either spontaneous, or producible by a very slight pressure upon the eyeball, a pressure far less than is necessary for its production in the normal eye. Within a short time afterwards he also discovered that the peculiar appearance of the optic disc, which had been supposed by him and other observers to be due to an arching forward of the optic nerve

entrance, was in reality due to its being excavated or cupped. He at once recognised the connexion of these two symptoms (the excavation and the spontaneous, or easily producible arterial pulsation) with the increased hardness of the globe, and his clinical observations soon showed him that all the other symptoms were also closely connected with this augmented tension. The next problem was to solve how this tension might be permanently diminished. All the usual remedies, such as mercurials, antiphlogistics, diuretics, diaphoretics, had proved as insufficient in his hands as in those of other practitioners. Mydriatics, which had been found to diminish intraocular pressure, were next had recourse to, but they also proved of no avail. He then tried tapping the anterior chamber, but this was only followed by a temporary benefit, which soon passed away again. The disease gradually progressed, nor could the relapses be stayed by a methodical repetition of the paracentesis, for he found that its therapeutical effect became each time less, and finally null, as far as the sight was concerned. In only two cases, out of a great number thus treated, did it prove of lasting benefit.

"Paracentesis having been of no avail in permanently reducing the intraocular pressure, he next had recourse to iridectomy, having found that it proved of great benefit in ulcerations and infiltrations of the cornea, by diminishing pressure; and that in cases of partial staphyloma of the cornea, and in staphyloma of the sclerotic, the protruding part often receded completely after this operation.

"He first tried iridectomy in glaucoma in 1856, and soon found that it not only permanently diminished the intraocular pressure, but that it might indeed be regarded as a true curative treatment of the glaucomatous process; having, however, like every other therapeutic agent, its natural limits. Since that time iridectomy has been recognised by most of the eminent oculists in Europe as the only cure known, at present, for glaucoma; but although it has achieved most brilliant results in the hands of many of our most distinguished English ophthalmic surgeons—amongst whom I would more particularly instance Messrs. Bowman and Critchett, who have from the commencement been its staunch and warm supporters—there are yet some English oculists of repute who either condemn the operation completely, or uphold it in so lukewarm a manner as in reality to 'damn it with faint praise.'

"My own wide experience of the beneficial effects of iridectomy in glaucoma enables me not only to recommend the operation most strongly to you, but even to urge you to trust to no other remedies, as they have all proved insufficient, and as you would thus permit the most valuable time, when an iridectomy might still save the eye, to pass irrevocably away. We shall see hereafter that an accurate prognosis of the benefits to be expected from iridectomy may be made in the majority of cases, and it will be shown why the operation may have proved unsuccessful in the hands of some practitioners. But too frequently impossibilities were expected of it; it was tried, for the first and only time, perhaps, in chronic cases of glaucoma, which were beyond all help; it proved, as might

have been foretold, unsuccessful, and was then at once discarded as useless.

"The commencement of the disease, the development of the different symptoms, and the course which glaucoma may run, present numerous variations, and for this reason a precise classification is somewhat difficult. But on closer observation it will be found that the several varieties also show a great tendency to pass over into each other. The family resemblance of these different forms is very marked, for they are distinguished from the commencement by certain characteristic symptoms; and although they will vary somewhat in their course, they all but too surely lead sooner or later to that last hopeless condition in which the eyeball is stony hard, the pupil widely dilated and fixed, the refractive media clouded, the optic disc cupped, and the sight either entirely, or nearly entirely, lost; that condition, in short, to which our forefathers confined the term glaucoma. The modern school of ophthalmology, however, no longer limits the name glaucoma to this last hopeless condition, but embraces in it all the varieties of the disease from their commencement, which lead to this last stage. In regarding the different varieties of glaucoma from a clinical point of view, we are particularly struck by the fact that one class of cases is distinguished from the commencement by more or less marked inflammatory symptoms; whilst another appears, in the commencement at least, to be free from inflammation, although in its course, inflammatory symptoms, even of an acute kind, generally make their appearance. We may, therefore, divide cases of glaucoma into two principal classes:—

"I. Cases attended with inflammatory symptoms.

"II. Cases in which there are *apparently* no inflammatory symptoms present.

"Glaucoma may exist as a primary disease, or may complicate a previously existing affection.

"We find that the different varieties of glaucoma show certain common characteristics, and we may generally recognise the four following stages:—

"1. A premonitory stage (glaucoma imminens, incipiens, of von Graefe);

"2. A stage in which the glaucoma is fully developed (glaucoma evolutum, confirmatum, von Graefe);

"3. A stage in which quantitative perception of light has been completely lost for some time (glaucoma absolutum, consummatum, von Graefe);

"4. A stage in which the eye undergoes glaucomatous degeneration (von Graefe)."

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ART. 101.—*Case of Glaucoma with Acute Inflammation, treated by Iridectomy.*

By Mr. J. W. HULKE.

(*British Medical Journal*, April 9, 1864.)

The following case shows most instructively the efficacy of iridectomy in glaucoma:—

"A lady, aged about fifty, mentally deranged, residing under the charge of a physician to an asylum situated about sixty miles from town, lost the sight of her right eye from a deeply-seated affection attended with severe inflammation, which rapidly ran its course, in spite of a well-directed treatment. A few months after this, her left eye was similarly attacked. Her anxiety lest she should lose this, her only eye, was extreme. She was now brought to town by the physician, with an attendant, and reached my house at noon, August 24th, 1861.

"The right eye was in the fourth stage of glaucoma—the stage of degeneration. The left eye was in the second stage of 'glaucoma with peracute inflammation.' The globe was very hard (T+3). The pupil was dilated and motionless. The anterior chamber was very shallow. The cornea was hazy. The optic nerve and retinal vessels could not be distinguished with the ophthalmoscope; owing to the cloudiness of the transparent media, the fundus returned merely a faint red glow. The sclerotic and conjunctiva were very red; the latter was very œdematous, and overlapped the cornea. The upper eyelid was œdematous. Acuteness of vision had rapidly decreased. A couple of days previously, she had been able to read, but now the figure of a person at a yard's distance appeared to her as a dim shadow. The field of vision was much contracted; but her extreme distress prevented an exact estimate of the extent of this diminution. She was suffering constant violent pain, with paroxysmal exacerbations. In her own words—'I feel as if my head were coming off.'

"In this condition, I knew that immediate iridectomy alone could prevent the destruction of the eye; and I proposed that she should remain in town a few days, when I hoped she might be able to travel home. She readily acceded to the proposal of iridectomy. But then a difficulty arose: the physician held himself responsible for the safe charge of his patient; and he could neither remain with her in town, nor leave her safely in lodgings with the attendant. Thus it was evident that she must either forego the only measure which could save her eye, or submit to it, notwithstanding the disadvantages of a fatiguing journey shortly after. I strongly urged the operation, in spite of this unfavourable circumstance. At one o'clock she was put under the influence of chloroform; and I performed iridectomy, removing about one-seventh of the iris. She awoke after sleeping about an hour, and took a light meal. At four o'clock, she left town by rail, wearing a light compress upon the eye, which felt sore, but was free from the violent pain experienced be-

fore the operation. The swelling of the eyelids was less—perhaps, in part, from the pressure of the compress. A fortnight afterwards I heard that ‘the pain has not returned; all redness is gone; the eye is still weak; sight is improved.’ In reply to an inquiry, the physician, under whose care she still continued, wrote me the following letter:—

“November 13, 1863.

“MY DEAR SIR,—I am glad to be able to inform you that the operation on Mrs. —’s eye was a great success. Her vision is really good, as she can read No. 2 (pearl) on your test-type sheet with facility. She cannot manage No. 1 (brilliant); nor could many others of her age, without previous disease. She wears spectacles, as she has done some years. The pain before the operation was very great: it however ceased entirely and immediately; and she has had none since. (The eye, however, which had been lost when you saw her is still the seat of occasional pain, at times rather severe.) The tension of the eyeball is now natural, the hardness having disappeared. It would look like an ordinary eye, except for the change in the figure of the pupil, which is elliptical, with the iris curiously thinned at one edge; and there is a small fleshy tubercle at the cicatrix, which nevertheless is no inconvenience to her. I regard the case as one of the most successful I ever saw in surgery. I know, by the rate at which she became blind with the other eye; how soon she would have been totally blind, but for your help; and this too, is her own thought on the subject. It is the more interesting, as she is decidedly insane, of a very passionate temperament, and in delicate health.

“Very sincerely yours,  
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ART. 102.—*On some of the Forms of Disease of the Eye constituting the Condition commonly called Amaurosis.*

By Mr. ERNEST HART, Ophthalmic Surgeon to St. Mary’s Hospital.

(London: Churchill, 1864. 8vo. pp. 32.)

This paper was originally read before the Harveian Society.

Mr. Hart states that amaurosis is not one, but many diseases, and that by the ophthalmoscope it is possible to distinguish in their early stages those deep-seated alterations in the choroid, retina, humours, and interior vessels of the eye which, without it, could only be guessed at, but which, separately or in different combinations, constitute the variety of diseases leading to blindness, without change in the external appearance of the eye, called amaurosis. Upon their diagnosis and treatment, in their early stage, rests the possibility of saving the patient’s sight; if they were so recognised, sight could now, in the majority of instances, be saved; if they were not, it was lost. He describes one or two of the most common conditions, selecting those which frequently occur to all engaged in general

practice, and were liable to be overlooked. Mr. Hart points out the appearance presented under the ophthalmoscope by the first streaks of cataract. The chapters in ophthalmology which deal of the difficulty of diagnosis between cataract (commencing) and amaurosis might be cancelled; for, with the ophthalmoscope, the diagnosis may be made absolute. He then proceeds to distinctions between "muscæ," or black spots before the sight, the indications either of functional disease or of grave organic disease. Their diagnosis is precise, while their treatment differs wholly, and it is important to establish it, for whereas the organic opacities of the vitreous humour constituting muscæ are often benefited by specific antisyphilitic treatment, functional muscæ might be greatly injured by such means. Mr. Hart then passes on to a serious class of amauroses, of which the early premonitory symptom is increasing short sight, with some uneasiness of the ball, and, perhaps, slight lachrymation. These are the first outward signs of congestive inflammation of the choroid, productive of posterior sclero-choroiditis, with staphyloma or pouching of the tunics of the eye around the optic nerve entrance. The use of glasses, while it alleviated the inconvenience, aggravated the progress of the disease. It is one of incredible frequency; if arrested, its worst consequence is more or less short-sightedness, but it frequently progresses, leading to atrophy of the yellow spot, detachment of the retina, ocular apoplexy, vitreous opacity, and fluidification, and sometimes to (complicated) cataract and glaucoma. It is a fertile source of the inveterate amaurosis of advanced life. In every case of advancing short sight, the fundus of the eye should, as a matter of simple justice to the patient and practitioner, be examined. For there were two kinds: in the one glasses were beneficial, in the other they were injurious, and should only be used exceptionally, and with minute precautions. Mr. Hart details the means which he uses to arrest this form of disease, and gives notes of cases. He then refers to an insidious form of amaurosis, of which the characteristic ophthalmoscopic sign is retinal pigmentation, the retina looking like a tiger's skin.

We quote the following observations on treatment:—

"In the first place, the use of concave glasses should be abandoned for reading, writing, sewing, or the examination of near objects generally. If possible, they should be totally abandoned. Patients who have already become very short-sighted by the progress of the disease, cannot abandon the use of some kind of glass for distant objects: but in order to check the use of lenses, it is well to forbid the use of any spectacles or eye-glasses, and to recommend them to carry some form of pocket-glass such as opticians make. There is frequently a degree of sensitiveness to light, and this indicates the use of tinted (plane) spectacles. The ordinary smoked glasses may be advantageously substituted in such a case by those tinted of a cobalt blue, which sufficiently exclude the irritating yellow and red rays without cutting off too much light, or producing an unpleasant obscurity.

"Local depletion of the congested choroid is highly useful: after the judicious application of this means, the immediate benefit is

often marked. I have for some time used for this purpose the kind of cupping apparatus known as the artificial leech, or that which I employ at St. Mary's, and in my private practice. This acts far better than ordinary cupping or leeching on the temples, and for obvious reasons. \* \* \* \*

"The cold douche is a useful adjunct to the eye; and when, as often happens, the eyeball is full, prominent, and tender, cold applications are useful. An evaporating lotion, made with the liquor of acetate of ammonia, glycerine, and rose-water, is an agreeable form of cooling lotion, which may be applied on linen rag laid over the eyes, or with a soft small sponge. The bathing the eyes with cold water should be a regular part of the daily toilette.\*

"Mustard baths to the feet, and dry cupping to the nape of the neck, are also useful.

"When the disease progresses rapidly, more active treatment is necessary: diuretics and sudorifics, saline purgatives, and iodide of potassium (in chronic choroiditis) are the most useful elements in medication. The guarding of the eye from yellow light, and prohibition of employment in reading, writing, and sewing, are essential when an eye has gradually lost all useful vision from perseverance in efforts at accommodation, to which it is no longer equal, and persistently employing glasses in the contest with nature.

"For the complications separate treatment is necessary, which it would be long to detail; hence the necessity for careful surveillance of a patient in whom shortness of sight is rapidly progressing.

"When diminution of the field of vision exists already at the time that the patient comes under the notice of the surgeon, and the ophthalmoscope shows glaucomatous excavation of the pupil, or flaky bodies in the vitreous, excision of a portion of the iris is necessary (Gräfe). In the majority of cases, even at this stage, the progress of the disease may thus be arrested. When the lens has become opaque, extraction becomes necessary: and it will need to be modified in its details by the knowledge of the circumstances that have preceded. Extraction in such cases offers, of necessity, far less favourable prospects than in cases of simple, uncomplicated cataract. But if the surgeon know the state of things beforehand, he can so provide for them, by modifying his operation, as to attain a large share of success. If the patient be brought under notice first in this final stage, it will still be in his power, by accurate estimation of the quantitative perception of a standard body of light, the investigation of the phosphenes, and the determination of the state of tension of the eye, to form an opinion of the retinal perceptive power and the condition of the vitreous.

"Other forms of choroiditis deserve great attention, especially

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\* An exquisite form of douche is that afforded by the various apparatus for "pulverizing" water. Luër, of Paris, has a simple form of syringe, which affords a refreshing shower of this kind. It is also supplied by Messrs. Savigny and Co., of St. James's-street. Savory and Moore have a very excellent eye-douche.

plastic exsudative choroiditis and general or disseminate choroiditis. Both of these are commonly syphilitic in their origin; and when impairment of reading power or otherwise defective vision occurs in the case of a person who has at any time been afflicted with constitutional syphilis, the ophthalmoscopic examination of the eyes can never be omitted. The remedies are much the same as that which I have above indicated, together with a specific treatment—mercurial inunction, the vapour bath, or the careful administration of bichloride of mercury with iodide of potassium or ammonium."

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ART. 103.—*A Case in which Amaurosis supervened on Eight successive Parturient Periods.*

By Dr. EASTLAKE, Physician to the British Lying-In Hospital.

(*Medical Circular*, March 19, 1864.)

**CASE.**—The patient was thirty-four years of age, married, the wife of a painter, and the mother of nine children, with all of whom she had accomplished her full time; there had been no miscarriages, and all the labours were ascertained to have been natural; nor was there with each any loss of blood greater than usual; nay, more, at the last the hæmorrhage was peculiarly slight.

The first accouchement was unattended by any untoward symptom, and convalescence was speedy; however, two or three days after the birth of her second child, she became suddenly and completely blind, as well as partially unconscious; when the consciousness was regained, the amaurosis still continued.

These conditions have now occurred after all her last eight labours, and on an average the defective vision persisted for three to five weeks.

The following was the state in which Dr. Eastlake found her on the occasion of his first visit, she having been then delivered three days:—Pulse rather weak, but no marked pallor in face, nor much general debility; intellect clear, though it had been aberrant on the previous day. There had had been no ergot given at the time of her labour, nor was there suppression of the milk or of the lochia; no exhausting discharge had existed; indeed, all the functions were duly exercised except that of vision, which was so far in abeyance as to hinder even the perception of light.

The ophthalmoscope showed only contraction of the retinal arteries; no strabismus existed, nor could any deviation from the normal condition of the eyeball be detected.

The treatment pursued was in accordance with the woman's general condition, liberal diet, bark, and mineral acids being allowed and administered, and with the most felicitous results.

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ART. 104.—*On the Diagnosis and Treatment of Cataract.*

By MR. ERNEST HART, Ophthalmic Surgeon to  
St. Mary's Hospital.

(*Lancet*, April 9, 1864.)

In a clinical lecture on this subject, Mr. Hart arrives at the following conclusions:—

1st. That it is possible to determine with certainty, in every case, whether cataract, incipient or well developed, is present; of what kind is that opacity; in what part of the lens situate: even when beyond the reach of naked-eye or daylight inspection.

2nd. That in the early stage we can form with accuracy a diagnosis and prognosis founded upon the actual state of the retina, choroid, optic papilla, and humours. This will modify our treatment, and may cause us to vary the mode of operation.

3rd. That considerable or rapidly-increasing shortsightedness may be considered as of ill-omen when, the cataract being fully formed, inspection of the fundus is no longer possible.

4th. That the utility of topical medication in the early stage, especially by the use of medicated gelatine (impregnated with iodide of potassium, &c.), is a therapeutic means deserving of attention.

5th. That the diathesis or constitution of the patient must be investigated: marasmic patients may be strengthened, diabetic patients dieted, and rheumatic and gouty patients doctored; and that by modification in these respects and in the operation, success may be secured in the most unpromising examples. For to be forewarned is to be forearmed.

6th. That the physical investigation of every patient suspected to be incipiently cataractous should be complete, including the test of acuity and range of vision; the direct examination by concentrated light with a bi-convex lens obliquely and laterally—ophthalmoscopically; and the production of the phosphenes.

ART. 105.—*On Recent Improvements in the Methods of Cataract Extraction.*

By MR. ROBERT B. CARTER.

(*Medical Times and Gazette*, Oct. 24, 1863.)

From statistics embracing more than 3000 cases, it appears that, under the most careful hands, about one eye in twelve has been lost by the old method of flap extraction; and we should therefore be prepared to welcome any prospect of more assured success. The chief reformers in the matter have been Drs. Schuft, Mooren, and Jacobson, and it is to the methods of the two last-named that Mr. Carter desires to call attention. The method of Dr. Schuft was

described some time ago in the *Ophthalmic Hospital Reports*, and has been often practised in this country. Some surgeons speak more favourably of it than others, and in Germany it has occasioned lively controversy. Mr. Carter has himself employed it only twice, both times with destructive consequences. Dr. Mooren lost by it ten eyes out of thirty-two; and, on the whole, Mr. Carter does not think it has increased the average success of the operation.

Drs. Mooren and Jacobson have employed their respective methods, the former in sixty cases with only two failures, the latter in one hundred cases with only two failures. They both affirm that the starting-point of inflammatory mischief after extraction is to be found in the portion of iris that is compressed during the exit of the lens—that is to say, in the portion beneath the corneal flap. They both remove this portion by iridectomy; but Dr. Mooren makes the iridectomy a preliminary operation, and only extracts when the eye has completely recovered from it, while Dr. Jacobson makes the iridectomy the last step of the extraction. The explanation of the difference is simple. Dr. Mooren does not use chloroform; Dr. Jacobson places his patients deeply under its influence. Without it, iridectomy after the exit of the lens would be hazardous, but by its assistance the hazard is obviated. Dr. Jacobson departs also from the ordinary line of incision in the transparent cornea, makes his puncture and counter-puncture at the junction of cornea and sclerotic, and slightly approaches the plane of his knife to that of the iris, so that much of the cut is carried through the conjunctiva. In this way he gains room for the easy exit of the lens, and places his wound nearer to the vessels that supply materials for its repair.

Both Dr. Mooren and Dr. Jacobson operate by an inferior corneal flap, but assign no reasons for doing so. Dr. Mooren enters into no description of his actual manipulations, but Dr. Jacobson describes his minutely.

The patient being profoundly narcotized by chloroform, Dr. Jacobson seats himself in a convenient position on the side of the bed, and, while an assistant separates the eyelids, seizes the conjunctiva and the submucous tissue, with proper forceps, at a point below and to the nasal side of the cornea. With the disengaged hand he introduces his knife half a line below the horizontal meridian, makes his puncture and counter-puncture as described, and pushes the blade straight onwards as far as may be convenient. He then withdraws it, having an isthmus of undivided tissue at the centre of the flap; and whether this isthmus contain a portion of cornea, or only conjunctiva, will depend upon the proportion between the width of the blade and the corneal diameter. The capsule is then freely opened with von Graefe's (feam-shaped) cystotome, and the isthmus is next divided, its corneal portion (if any) with the point of the knife, its conjunctival portion with scissors, at about two lines from the rest of the wound. A very gentle pressure with the thumb, through the upper lid, turns the upper portion of the lens a little backwards, causes it to perform a sort of rotation in the eye, and to present its lower edge at the pupil, through which it passes in the

usual way. The lower segment of the iris is next drawn out of the wound, and cut off close to its ciliary margin. The eye is then cleansed from blood and coagula, and, if the cornea be in good position, is closed immediately. If the cornea be sunken, Dr. Jacobson waits until it is elevated by freshly-secreted aqueous humour (that is, from five minutes to half an hour) before he applies the Arlt's compress, which, both by Dr. Mooren and himself, is considered an essential part of the treatment.

During the whole of the operation, the effect of chloroform is maintained in such a degree as to render the ocular muscles absolutely passive; and the inhalation is therefore renewed from time to time as may be needed.

Dr. Jacobson devotes to the after-treatment of his cases a degree of care and attention that must contribute very largely to his success. Each patient, for twenty-four hours after the operation, receives the undivided attention of a nurse. The earliest symptoms of inflammation are met by iced poultices, changed every few minutes, and by continuous leeching where the symptoms are severe, and the patient's strength will permit. Four leeches are applied in front of the ear, and replaced by others as they fall, until no less than from forty to eighty have been used in a single case. Dr. Mooren's method does not seem to entail much liability to inflammation, and he speaks as if little or no treatment had been required by his patients.

Upon reviewing the respective merits of the two forms of operation, Mr. Carter thinks it is manifest that the proceeding of Dr. Jacobson is best adapted for hospitals, and that of Dr. Mooren for private practice. In the former, it is usually an object to save time, and to discharge the patient as soon as possible, while the advantages of skilled nursing and constant medical superintendence are available. In the latter, time is of less importance, and it will usually be desirable to diminish the risk of inflammation by dividing the whole manipulation required into two distinct operations.

Dr. Jacobson deserves the thanks of the public for having placed upon so wide a basis of experience the fact that chloroform may be used in cataract extraction with perfect safety, and that the various hypothetical objections to its employment have no foundation in the occurrences of practice.

Against the greater safety afforded by iridectomy in cataract extraction, two objections have been raised—namely, the unsightliness of the coloboma, and the dazzling produced by the enlargement of the pupil.

Of these objections, the first might fairly be made a question for the patient—"Will you have one risk in twelve with a round pupil, or one in fifty with an oblong?"

The second is scarcely found to exist in practice. When present it may be obviated by a tinted spectacle lens, which should be made by cementing a plane blue glass between two plano-convex of the needful power. Or it may be prevented by making a superior iridectomy and flap, in which position the deformity also is much concealed.

In cases where the cortical portion of the opaque lens is soft and swollen, and where much soft matter is likely to be left in the eye, the inferior coloboma iridis is decidedly advantageous. It allows cortical matter to gravitate freely into the anterior chamber, and to rest against the cornea, where it is absorbed without producing irritation. Under all other circumstances Mr. Carter prefers the superior flap.

Mr. Carter has himself combined iridectomy with extraction in the following cases, some of which well illustrate the advantages of doing so:—

CASE 1.—W. M.—, aged thirty-four, labourer. Right eye destroyed by injury many years ago. Sight of left has been gradually failing. Lens opaque. Qualitative perception of light. A superior corneal flap being made under chloroform, the mingled vitreous and aqueous humours, equally fluid, escaped until the globe was nearly empty. The lens could not be removed; I cut out a piece of iris, and closed the lids. The wound healed perfectly, the globe refilled, and, except for the altered pupil, the eye recovered the same appearance and the same perception of light as before the operation.

CASE 2.—W. B.—, aged sixty-five, gardener. Senile cataract of both eyes. Right eye, extraction by superior flap, without iridectomy. Left, iridectomy, superior, and extraction three weeks later. Reads No. 2 Snellen equally well with either eye.

CASES 3 and 4.—J. B.—, a feeble, infirm woman, aged seventy-two. Blind two years of left eye, two months of right. Right eye, large lens, externally softened, whitish. Left eye, lens amber-coloured, and hard. Double iridectomy under chloroform, double extraction under chloroform three weeks later. Inferior operations on the right eye, superior on the left. Perfect healing, and good sight with both.

CASE 5.—J. C.—, aged seventy, widow, feeble. Hard cataract in left eye only. Iridectomy without chloroform. Three weeks later, extraction without chloroform by superior flap. Violent spasm of the ocular muscles, by which the lens and a very large quantity of firm vitreous were expelled on completion of the section. Corneal flap folded down by upper lid. After a short period flap replaced, and lids closed. Good healing. After an imprudent exposure to light on the sixth day, iritis. Atropine and cold poultices; and recovery with closed pupil. Artificial pupil made a month later, through which the patient now reads No. 6 of Jäger.

CASE 6.—M. B.—, aged sixty-eight, widow. Hard cataracts in both eyes. Double superior iridectomy under chloroform, extraction from right eye only, without chloroform, a fortnight later. Reads No. 1 Snellen.

The above cases, all of which, except the first, have been operated upon this year, have shown that the preliminary iridectomy greatly facilitates the exit of the lens; and, in the fifth case, the eye recovered after a series of misadventures, which would have been certainly fatal to it if the iris had been entire. The great loss of vitreous humour would have produced prolapsus iridis, delayed healing, chronic inflammation, and probable phthisis bulbi.

A comparison of No. 2 with the right eye of the same patient shows that a superior coloboma iridis affords as good vision as a round pupil; and a comparison between Nos. 3 and 4 shows that an inferior coloboma does not exert a more prejudicial influence. Something would of course depend on the different sensitiveness of

different retinæ, but Mr. Carter apprehends that a tinted glass would always reduce the question to one of appearance.

It is necessary to mention that if the lens does not move readily by very gentle pressure, Dr. Jacobson excises a portion of iris to facilitate the extraction. The only objection to iridectomy at this stage of the operation is the consequent bleeding, which conceals the lens from the surgeon.

In conclusion, Mr. Carter observes that Dr. Jacobson's cases were taken at random, but that Dr. Mooren's were all selected as highly unfavourable for the ordinary operation. His sixty patients were all either very aged and feeble, or very plethoric, or suffering from cough, or from disease of the vitreous body or choroid, in addition to lenticular opacity. One of his two failures appears to have been due to an accident; so that, on the whole, his statistics may be considered equal to those of Dr. Jacobson. Mr. Carter learns from his friends Mr. J. Zachariah Laurence and Dr. Taylor, of Nottingham, that they have each of them employed Mooren's method with advantage.

ART. 106.—*The Restoration of a Lost Nose by Operation: exemplified in a Series of Cases, illustrated with Wood Engravings.*

By Mr. JOHN HAMILTON, Surgeon to the Richmond Hospital, Examining Surgeon to H.M. Customs for Ireland, &c.

(London: Churchill, 1864. 8vo. pp. 58.)

In this essay Mr. Hamilton relates the history of ten cases in which he successfully restored a lost nose by the Indian method of operation—that is, by modelling the new organ from a flap cut from the forehead. He rightly thinks that these cases sufficiently justify the surgeon in performing the operation, and he adds the following precepts for his guidance:—

"1. In preparing the stump of the old nose for the reception of the flap of skin which is to form the new organ, care should be taken that the raw surface be not too broad; for, if so, the nose will prove spread out and flat, which was the fault in the case of Winifred Byrne. The rule should be to make it as narrow as is consistent with sufficient space to ensure firm union. The lateral incisions should be carried obliquely downwards and outwards, without curve, till the lower angle, and allowance made for retraction outwards towards the cheek, particularly if the cut goes through a cicatrized part, where (as we observe in burns) the retraction is much greater than in healthy structures.\*

"2. A careful measurement of the size of the new nose should be made by means of a piece of leather, and the outline of its shape marked out in the centre of the forehead. This may be

\* See Erichsen, *Science and Art of Surgery*, p. 834, third edition.

done, first, with ink, but the lines afterwards gone lightly over with a finely-pointed stick of nitrate of silver; the mark of the last is durable, whereas the flow of blood during the operation soon washes away the ink, and a useful guide is thus lost.

"3. The shape of the flap to form the new nose which I prefer is one the peculiarities of which are, that the centre septum piece above ends in a point, so that the edges of the wound at the top, after its removal, can be perfectly approximated, and the unsightliness of the forehead cicatrix thus lessened. This centre piece is small, also, for, being only useful to mark out, as it were, and give an appearance of a septum, it need not be large. The angles of the flap are only slightly rounded, imitating the natural curve of the *alæ nasi*, the side lines straight. \* \* \* Each operator seems to have a flap modified in shape to his own taste. That used by Mr. Carpuë and by Mr. Liston is like an ace of clubs, which, having tried, I do not like; the centre piece is clumsy, and the curve at the angles too large. This form, however, from the high character of the last operator, has been adopted by many surgeons. Mr. Skey takes his flap from the side of the forehead, but I do not think it an improvement; the necessarily long stalk must weaken the vascular supply, and hence, perhaps, explains an occurrence met with by Mr. Skey,\* but which I have never seen in my own practice, the shrivelling away of the new organ. The piece of skin, also, removed from the forehead to form the new nose should be sufficiently large, and allowance made for its reduction in size from contraction, subsequent to its removal; and, in raising it, care should be taken to leave the periosteum untouched, to prevent exfoliation of the os frontis. The root of the flap between the eyebrows should not be too narrow, and the incision lower down on the side to which the twist is to be made, usually the left.

"4. To prevent the blood running down the nostrils into the pharynx, while the patient lies on his back under the influence of chloroform, the nostrils ought to be plugged with cotton previous to commencing the incisions. All bleeding should have ceased before the parts are brought into apposition; the time necessary for this is shortened by the application of iced water.

"5. The edges of the flap and those of the pared surface of the old nose should be brought into apposition from below upwards, beginning at the lower angles with two accurately applied sutures; fine silver wire is generally preferred to silk for the sutures, but I have latterly used fine strong thread, which is more easily introduced, and produces quite as little irritation as the wire. At the lower part of the forehead wound, where strong traction is necessary to bring the sides of the gaping wound together, needles and twisted suture are required.

"6. The ligatures may be removed about the sixth day; but the metallic ones or those of fine thread cause so little irritation that there is no necessity for hurrying their removal, and it is sometimes desirable to leave them a little longer at weak points of union.

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\* *Operative Surgery*, second edition, p. 524.

"7. About a month after the operation, when the vitality of the new nose is confirmed and the union everywhere soundly amalgamated, the stalk between the eyebrows may be divided, pointed, and its edges pared, and put into a bed cut for it at the root of the nose, and secured in this position by a fine suture or small needle till the union is complete.

"8. In two or three weeks after this, should it be thought desirable to make a septum, it may be done in one of two ways—either after the manner recommended by Liston, viz., to make two incisions on each side of the centre of the upper lip, leaving a space rather less than a quarter of an inch between them, piercing the substance of the lip from its upper part, through the prolabium. The centre piece, only connected above, has the prolabium removed from the tip, and is raised up and fixed by needle or ligature to the surface prepared for it on the end of the inside of the new nose. Or, when the lip is very long, a triangular piece of sufficient length and breadth may be cut out, the base adherent above, the apex loose below, the point squared, turned up, and brought in contact with the pared end of the new nose. To facilitate the turning up of the septum piece, the frænum labii should be divided. The nostrils are very liable to contract, and require to be kept open for some time by small rolled-up cylinders of lint, or quills. The septum, though apparently too thick and clumsy at first, soon contracts to a proper size. The edges of the divided upper lip, brought accurately together by needle and ligature, unite without any deformity."

### ART. 107.—*Hæmorrhage from the Ears.*

By M. TRIQUET.

(*Gaz. des Hôp.*; and *Brit. Med. Journal*, March 5, 1864.)

Discharge of blood from the ears, M. Triquet observes, is very common; its causes are numerous and varied; the difficulty of distinguishing them is great; the prognosis requires caution; and the treatment requires particular care on the part of the surgeon. Hence he proposes to sum up his experience on the subject.

The causes of otorrhagia are various.

A. The hæmorrhage may be traumatic; and its source may be—

I. Accidental; or II. Surgical.

B. It may occur pathologically from disease.

C. Otorrhagia may substitute or supplement other discharges, as the catamenia.

A. 1. *Accidental Traumatic Hæmorrhage.* 1. *Fracture of the Petrous Bone.* In fracture of the skull by indirect cause, or by *contre coup*, the petrous bone is broken across. If, in this case, the sinuses be opened, the injury is immediately affected side, w<sup>h</sup> double fractu  
 membrana tympani ruptured, blood on the  
 In cases of ears. The

nature and suddenness of the accident—for instance, a blow, or a fall on the head or on the feet—and the instant flow of blood from the ear, leave no doubt as to the nature of the injury. In fact, otorrhagia may in such cases be regarded as a symptom of fracture of the petrous bone. Sir A. Cooper, however, gives the case of a pugilist, who lost a considerable quantity of blood from the ear after receiving a violent blow from the fist on the side of the head; the membrana tympani alone was ruptured. Blows on the lower jaw (on the chin) are also sometimes attended with fracture of the temporal bone and discharge of blood from one or both ears. Cases of this kind would doubtless be more frequent if the effects of blows and of falls on the chin were not deadened by the temporomaxillary interarticular cartilage. In old persons, in whom the anterior wall of the auditory canal is thinned and perforated, a fall on the chin may readily produce fracture and hæmorrhage from the ear. Cases in which blows or falls on the lower jaw have been attended with otorrhagia have been mentioned by Dr. Morvan (*Arch. Gén. de Méd.*, 1856), and by Voltolini of Dresden (*Virchow's Archiv.*, vol. xiii.).

2. *Wounds of the Auditory Canal and of the Tympanum.* a. Foreign bodies in the ear, animate or inanimate, may wound its membrane and produce a discharge of blood. An examination of the history of the case, and direct inspection of the ear, will lead to an easy recognition of the situation and cause of the hæmorrhage. When the hæmorrhage has been caused by insects the previous history is of great value. Thus, it has been found that a patient had been long subject to otorrhœa; that he lived in the country during the summer, and sometimes slept in the fields; that he had been awakened by a violent pain in the ear, and that a sanguineous discharge had soon appeared. If the auditory canal be examined by means of a speculum, the presence of a foreign body attached to the walls of the canal or of the membrana tympani may be readily detected.

b. Otorrhagia is often produced by rupture of the membrana tympani: (1) during the paroxysms of hooping-cough or of asthma; (2) during sneezing; (3) during strangulation or hanging; (4) during catheterism of the Eustachian tubes; (5) in ascending high mountains or descending into low valleys. In all these cases the mechanism of the rupture is easily understood. Thus, in hooping-cough, asthma, &c., the air is driven with violence through the Eustachian tube into the tympanum, the membrane of which, being delicate and incapable of offering much resistance, is ruptured at its weakest point—near the insertion of the handle of the malleus. The laceration was triangular in one, and linear in seven, of eight cases noticed by M. Triquet. Fabricius Hildanus relates, and M. Triquet has seen, instances in which the membrana tympani has been ruptured, with considerable otorrhagia, during vomiting by intoxicated persons. M. Triquet has seen the same accident occur in bathers, from throwing themselves into cold baths from a great height. In artillerymen the membrana tympani is ruptured by the column of air which is thrown violently into the auditory canal during the discharge of



large pieces. M. Triquet has also seen rupture of the tympanic membrane and otorrhagia produced by a violent clap of thunder.

c. Discharge of blood from the ears in strangulation and hanging is attributed by Wilde and Geoghegan of Dublin (who first directed attention to the subject), to simultaneous rupture of the mucous membrane of the middle ear and of the membrana tympani. In a figure given by Wilde, the laceration is cordiform, and is situated close to the tubercle of the malleus. In this same category must be placed the otorrhagia experienced in ascending mountains or descending valleys. The sudden diminution or increase of the atmospheric pressure on the tympanum may produce its rupture, or may permit the blood to escape from its thin capillaries.

11. *Surgical Traumatic Causes.* In sounding the Eustachian tube, however little the membrana tympani may have been softened by chronic inflammation—generally strumous—its rupture readily takes place, and gives rise to an immediate and abundant discharge of blood. In other cases the surgeon produces a discharge of blood for therapeutical purposes; as in puncture of the membrana tympani to evacuate mucous or purulent collections in the middle ear; or in scarification of the mucous membrane of the external meatus. Discharge of blood may also arrest the surgeon's proceedings in his attempt to extract foreign bodies from the ear, either in consequence of the membrane being lacerated by his instrument, or more frequently because, by attempting to seize the foreign body, it has been roughly pushed back into the middle ear, through the membrana tympani, which has been lacerated or destroyed in the attempt; at extraction made by the surgeon himself or without his knowledge.

B. *Pathological Otorrhagia.* 1. First among these comes the discharge of blood, often mixed with pus, which takes place from the ear during severe attacks of fever, as typhoid, small-pox, &c.

2. Granulations of the auditory canal, which almost always accompany chronic catarrh, often give rise, in weak, lymphatic, or strumous subjects, to discharges of blood, sometimes rather abundant. M. Triquet was lately consulted by a student, who had, in this way, lost at one time more than two ounces of blood. The source of the hæmorrhage is readily ascertained by examination with the speculum in a good light.

3. When old ceruminous concretions, condensed, and almost as hard as flint, have for a long time pressed against the walls of the canal, on which they are moulded, the epithelium, softened and adherent to the morbid mass, is ordinarily detached with it, either whole or in pieces, under the influence of means employed for this purpose. The sudden exposure of the papillary layer of the lining membrane of the meatus very often produces slight hæmorrhage, which is indeed of no importance, but frightens the patient, and may cause him to lose confidence in his surgeon.

4. In chronic otitis, generally in scrofulous cases, accompanied by destruction of the membrana tympani with granulations of the mucous membrane of the middle ear, rather obstinate hæmorrhage is apt to occur during coughing in otitis or pertussis, or during

erying in children, &c. The sudden flow of blood which then takes place towards the head produces congestion of the granulations of the middle ear, and produces rupture of some of the capillaries. Hæmorrhage is also produced in attempts to explore these granulations by a fine instrument, for the purpose of discovering their number, consistence, seat, &c.

5. In the same manner, hæmorrhage from the ear is produced in the exploration of polypi and fungous growths in the ear by means of a stylet or sound. It is, however, impossible to gain an accurate idea of their depth, or of the number of their roots, without employing this method of exploration.

6. Caries and necrosis of the petrous bone, scrofulous abscesses, and the secondary otitis which attends severe attacks of fever, may produce fatal hæmorrhage from the ears. Thus, when the necrosis involves the carotid canal, blood escapes in abundance through the ear if a spiculum of bone wound the internal carotid. In such cases hæmorrhage has always been followed by death, notwithstanding the application of all the resources of surgery, including ligature of the common carotid. Cases of this kind have been related by Porter (Graves's *Clinical Medicine*), by Syme (*Edin. Monthly Journal*), and by Toynbee (*Descriptive Catalogue*).

7. Fungous growth of the dura mater may, after destroying the membranes and the bone, penetrate into the cavities of the ear. A prolongation of the growth may project into the external meatus and give rise to hæmorrhage, and thus mislead even an experienced practitioner, as happened in some cases mentioned by Thibault.

C. *Supplementary or Substitutive Hæmorrhage.* Hæmorrhage from the ear may replace a normal flux, such as the catamenia: or it may follow accidental discharges, as those from piles, old ulcers, &c.; or it may supplement imperfect menstruation. Hæmorrhages from the nose, mouth, or eyes, have also been observed to bear the same relations to the catamenia. M. Triquet was once consulted by a young lady, seventeen or eighteen years of age, who had a discharge of blood from the left ear at each menstrual period. On careful examination, the right ear was found to be perfectly healthy. In the left ear the membrana tympani was almost entirely destroyed; and the middle ear was filled with large reddish granulations, from the surface of which the blood escaped. The patient's mother stated that, when a child, she had had a purulent discharge from the left ear; that it existed at the time of her first menstruation, and was then replaced by the sanguineous discharges. In the intervals between the catamenial periods, the purulent discharge reappeared—the two discharges thus alternating. M. Triquet has since observed two similar instances.

The *differential diagnosis* of discharges of blood from the ear under various circumstances often presents great difficulties. In otorrhagia attending fracture of the petrous bone the surgeon is guided by the history of the case, in which there has been a fall or blow, immediately followed by a sanguineous discharge from the ear; and his diagnosis is confirmed by the presence of other signs

of injury of the head. The same course of investigation is to be followed in the case of foreign bodies in the ear. The surgeon will find that the patient has introduced into his ear a pin, a needle, a piece of glass, &c.; or that he has slept in the fields during the summer, and that on awaking he has felt pain, accompanied by a flow of blood. In this case we may be certain that an insect has entered the auditory canal, and that the puncture made by it is the cause of the hæmorrhage. Moreover, a careful examination with the speculum will render the diagnosis certain. When the hæmorrhage arises from rupture of the membrana tympani during hooping-cough, catheterism of the Eustachian tube, strangulation, &c., the nature of the case will be readily learned.

But the difficulties of diagnosis become far more serious when we have to determine the cause of the discharge which sometimes accompanies chronic diseases of the ear. If there be an indurated ceruminous mass, simple examination with the speculum will be sufficient; but if granulations, a fungous growth, or a polypus come into view, the differential diagnosis is sometimes very obscure. If, however, the patient be scrofulous, and have chronic otorrhœa, the discharge of blood will have its source in granulations of the mucous membrane of the middle ear; and this fact may always be ascertained by examining the ear with a speculum, and introducing a probe, which, on touching the granulations, will at once produce hæmorrhage, as it will also do in the case of polypi or fungus. In cases where fungus of the dura mater projects into the ear and gives rise to hæmorrhage, the diagnosis is surrounded with very great difficulties; and the existence of a fungus of the dura mater cannot, in truth, be rationally suspected until a projection is seen on the skull. The other symptoms, such as headache and pain, may be absent; and other signs are too uncertain. Hæmorrhage arising from caries or necrosis of the petrous bone, or from secondary scrofulous abscesses, may be easily recognised by examination with the speculum and a probe: the greatest gentleness, however, is necessary, as the sequestrum of the petrous bone may be very readily displaced, and perhaps produce a fatal wound of the internal carotid. In otorrhagia supplementary to menstruation the coincidence of the discharge with the catamenial period will remove all doubts as to diagnosis, and will afford sure indications as to treatment.

The *prognosis* is grave in all cases; because the life of the patient may be endangered, as in fractures of the skull, in fungous growths, and in necrosis of the petrous bone. And, even where life is not threatened, there is still room to fear that the patient will become more or less deaf, as in laceration or destruction of the membrana tympani, which necessarily deranges the arrangement of the auditory ossicles, and more or less complete abolition of the sense of hearing.

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**ART. 108.—Case of Gunshot Wound of the Head, with Complete Loss of Speech and Ultimate Recovery.**

**By Mr. WALTER DICKSON.**

(*Lancet*, Jan. 30, 1864.)

**CASE.**—J. H.—, aged twenty, an able seaman, while engaged in the attack on the Peiho Forts of the 25th of June, 1859, was struck on the head by a round shot or splinter, which at the same instant killed the man next him. H— lay comatose for thirty-six hours. When the head was examined, slight swelling of the scalp was found over the left parietal bone. There was abrasion of the skin, but to no great extent. No depression or other tangible indication of fracture could be detected.

On June 27th, although still insensible, he became very restless and was occasionally convulsed. In the evening of that day he passed out of this state of coma. His eyes looked intelligent, and he appeared partly conscious when spoken to; but he was unable to articulate, moaning incessantly, tossing his body and limbs about, and expressing intolerance of any examination of the head. The pulse was very slow (38), but of fair strength; the skin was of normal temperature; the pupils were equal, and rather dilated. The motions of the extremities seemed unimpaired. He passed his urine and feces apparently unconsciously. A dozen leeches were placed on the left temple, which bled freely; and cold wet cloths were applied to the head.

June 28th.—Extremely restless, requiring to be kept in bed by force. Other symptoms as last night. Took ten grains of calomel.

29th.—Swelling of scalp subsided; is comparatively tranquil; countenance seems more lively and intelligent; eyes are observant, brightening at the sight of food, of which he partakes with avidity. He recognises those about him; but he is unable to speak. Pulse 42, soft and full; is still apathetic, and passes his evacuations in bed.

July 1st.—Aspect improving, but the mental powers are evidently weak; is quiescent; eats and sleeps well; no paralysis of the limbs, nor of the tongue, nor of the facial muscles is perceptible. He makes repeated efforts to speak, but is unable to articulate. The hearing is not impaired; pulse 60; tongue clean; appetite voracious.

4th.—Has seemed much more rational in the last two days; knows his attendants, and makes great endeavours to speak to them; but he can only emit inarticulate sounds. When spoken to, he answers by signs—a nod or shake of the head. He is observant of what is going on around. He is emaciated; but his health continues to be good. His pulse is natural; his appetite excellent.

After this date he went on favourably. His bodily health was soon as good as it ever was; but his mind continued somewhat weak, and all power of articulation was lost. His being unintelligible to his comrades appeared to give him much concern, and his spirits were greatly depressed. In time, however, as his mental powers became stronger, he was able to converse readily by signs, and to write with ease and dexterity on a slate; he also preserved the habit of always exercising, although inaudibly, the tongue, palate, and lips as in ordinary pronunciation.

In October he left China. He states that no improvement took place on the homeward voyage. He was some time at Haslar Hospital, and, subsequently, under treatment at some of the London hospitals; but, according to his account, he was not benefited by the remedies employed. At length

one day, suddenly and apparently without cause, he regained the long-lost vocal power, and, to the surprise of himself and his friends, was able to articulate. He soon spoke distinctly, and has continued to do so until the present time.

I saw him a few days ago. His voice is clear and his articulation is, in general, free from all defect; but he finds that when excited, even by a very small quantity of drink, or when accosted suddenly by strangers or otherwise placed in novel and embarrassing situations, his power of utterance is sensibly impaired. The memory and intellectual faculties, which he is conscious were at one time considerably weakened, are now restored. Before he was wounded he had always enjoyed good health; and there seems no reason to suspect simulation or exaggeration in regard to the peculiar features of the case, either while under actual observation or in its subsequent history.

ART. 109.—*Case in which the Mastoid Process was Trephined.*

By M. FOLLIN.

(*Gaz. des Hôp.*; and *British Medical Journal*, March 21, 1864.)

M. Follin has communicated to the Surgical Society of Paris the history of a case in which the mastoid process was trephined for abscess of the mastoid cells consecutive on inflammation of the middle ear. The history runs thus:—

CASE.—The patient, aged forty-four, was habitually of good health; but from his youth had been subject to throat-affections, and latterly scarcely a year had passed without his having one or two attacks of acute angina, generally ending in abscess. After one of these attacks, occurring in March, 1863, he was seized suddenly, early in April, with severe pain in the right ear. Three days afterwards there was an abundant purulent discharge from the ear, and he was deaf. During six weeks the pain was incessant and unbearable; it extended to the whole of the right side of the head, and was accompanied by fever and delirium, especially at night. During the next six months the discharge and deafness continued, but the pain diminished slightly, presenting exacerbations and remissions. At the end of the first month of the disease a slight swelling was observed in the right mastoid region, and pressure on this part caused pain. Latterly the skin here had assumed an erysipelatous redness, and the pain had increased. A medical man applied a seton below the mastoid region; this had no effect on the main disease, but seemed to allay the pain a little. The patient now came to Paris to consult M. Follin. At this time the mastoid region was swollen, reddish, and tender to the touch; pus escaped abundantly from the ear; and the patient, tormented by incessant pain in the right side of the head, had sleepless nights. There was no abscess apparent externally, nor any fistulous passage. M. Follin arrived at the conclusion that there was pus in the mastoid cells, and advised the use of the trephine. Accordingly, on November 18th, a crucial incision was made over the mastoid region, and the four flaps were carefully dissected back so as to expose the bone. The periosteum having been also divided and raised, a small trephine was applied, and a piece of bone, seven *millimètres* (rather more than a quarter of an inch) in diameter was removed. The mastoid cells were then seen to be filled with a large quantity of pus. M. Follin then enlarged the edges

of the opening in the bone so as to give it a conical form, and introduced some charpie; the edges of the incision were kept apart to prevent too rapid cicatrization, and simple dressing was applied.

The next day pus had ceased to be discharged from the ear, and the pain in the head ceased. The wound suppurated gradually, and granulations soon appeared. The pus contained in the mastoid cells escaped regularly, and the otorrhœa entirely disappeared. The only accident during the patient's recovery was very slight inflammation of the cervical glands. A month after the operation the opening was entirely cicatrized, and the patient was relieved of all his symptoms, continuing, however, deaf in the right ear—which is not astonishing when it is considered what an extensive amount of disease must have existed prior to the operation.

In two other cases, formerly communicated to the same society by M. Follin, trephining of the mastoid process was performed successfully in similar circumstances; but in these cases there were also fistulous openings in the mastoid region.

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### ART. 110.—*Extirpation of the Parotid Gland.*

By Dr. DANIEL BRAINARD, Professor of Surgery in Rush Medical College.

(*Chicago Medical Journal*; and *Dublin Medical Press*, Dec. 2, 1863.)

CASE.—Timothy Bradley, of Fond du Lac, of Wisconsin, aged forty-five years, healthy, of good constitution, perceived, when he was twenty-one years of age, a tumour below the body of the lower jaw. This grew to the size of his "fist," without pain, and was removed in 1850 in Ireland.

About 1858 he perceived it returning in a small tumour behind the ramus of the jaw on the right side. It grew without pain until January, 1863, when it extended up to the zygomatic arch, and down to the middle of the neck, forward upon the side of the face, and backwards under the sterno-mastoid muscle. At this time it was detached, very moveable, with the skin adherent to the surface.

Wednesday, January 14th, 1863.—Dr. Brainard removed the tumour in presence of the Medical Class of Rush Medical College, assisted by Prof. J. W. Freer.

Two incisions were made to embrace the adherent portion of the skin, which was then dissected up, before and behind. Dr. Brainard then commenced separating it from below upwards with the finger. This was readily done till the back and upper part were reached, where it involved the external carotid and jugular vein, which were tied below and then divided. The dissection was then completed mostly with a blunt instrument. The upper end of the external carotid artery required ligature, and one branch below. The tumour in its growth had drawn the parotid gland out of its place, so that it was not difficult to pass an instrument behind its upper part.

When the tumour was removed, there was a space extending from the articulation of the lower jaw below the corner of the os hyoides. The styloid process, stylo-hyoid ligament, the external jugular vein and internal cerebral artery were exposed, and the space behind and within the ramus of the jaw was cleared.

Prof. Freer, for many years Professor of Anatomy in the College, examined carefully, and could find no trace of the parotid gland. The right side of the face was paralysed. On examination of the tumour, pieces of the gland in a healthy state were found around the upper edge; below this a considerable part seemed composed of the same tissue altered in structure, which was softened and redder than natural. At the lower part there was a softer granulated mass, which Dr. Freer examined with the microscope. He found no common cells, but rounded granules with traces of ducts.

Without assuming to decide positively as to the tissue in which this disease originated, Dr. Brainard thinks it is certain that it involved the whole of the parotid gland, except slight particles above. To the naked eye the structure of it appeared to be the fibro-plastic material. No doubt can, he thinks, exist as to the removal of the entire gland, which he has removed in two other instances.

The time required to complete the operation was perhaps thirty minutes. The hæmorrhage was considerable, but by tying the external carotid, before dividing it, this was partly controlled. No accident happened to the patient, and in twenty days he returned home with the wound nearly healed.

ART. 111.—*The Laryngoscope: illustrations of its Practical Application, and Descriptions of its Mechanism.*

By GEORGE DUNCAN GIBB, Assistant-Physician and Medical Registrar to the Westminster Hospital.

(London: Churchill, 1863. 8vo. pp. 46.)

The illustrative cases to which this pamphlet is devoted will be read with interest and instruction by all who use, or who desire to become acquainted with the use of, the laryngoscope. The pamphlet is, indeed, a laryngoscopic clinic on a small scale. The importance of the instrument which Dr. Gibb has studied so enthusiastically and well as a means of diagnosis may be gathered from the following summary of its uses:—

“In examining the throat, the larynx, or the nose, the reader must remember all the various special parts and structures which are to be found in these situations, and he should make himself acquainted with their shape, position, colour, and movements in health, before he can venture to understand them when diseased. In regard to the movements of the vocal apparatus in the production of sounds this is most essential. Having become familiar with all these, he will be prepared to inspect and to recognise diseased conditions. For convenience of illustration, the throat and its connexions may be divided into different regions, which may be wholly or partially examined, according to the structure involved, or the seat of any particular lesion.

“Thus we may take—

“1st. Varying states of congestion of the mucous membrane of the pharynx, larynx, and trachea. This may proceed to inflammation of an acute or chronic character, and involve some of the

numerous follicles; or the follicles may become generally diseased, no part of the mucous membrane that is exposed to the influence of the air (including the pharyngo-nasal recess) remaining unaffected, and not unfrequently proceeding to ulceration. This constitutes the follicular disease of the throat, and is tolerably frequent.

"2nd. Different affections of the tonsils, uvula, and soft palate, which materially, more or less, affect phonetic intonation. The soft structures modify the voice, although perfect phonation cannot be carried on without the integrity of the vocal cords.

"3rd. Diseases of the epiglottis, such as congestion, inflammation, ulceration, relaxation, or contraction of its folds and ligaments, congenital and acquired, resulting in pendency, attenuation, thickening, displacement, malformation, tumours, &c.

"4th. Diseases of the arytenoid cartilages and aryteno-epiglottidean folds of mucous membrane, in themselves forming a distinct, numerous, and highly important class of affections. Invasion of the integrity of these little cartilages particularly, causes more misery, suffering, and wretchedness than from disease of any other part of the throat. The most horrible feelings of suffocation are produced when they are undergoing ulcerative exfoliation, and if the patient does not succumb from hectic and exhaustion, he is an object for life. The diseases and alterations in the cartilages of Wrisberg and Santorini must be included in the 4th series.

"5th. Affections of the vocal apparatus, namely, the superior or false, and the inferior or true vocal cords or ligaments, and their immediately contiguous parts. They are Legion, and comprise ulceration, loss of substance, thinning, thickening from hypertrophy, or interstitial deposit, and loss of nervous power, varying to complete paralysis of one or both sides; vascularity, either streaked or punctiform, partial or general redness, and acute inflammation; warty, pedunculated, or follicular growths of varying character and consistence, from the fibro-plastic and fibro-cellular to epithelial; œdema, sub- and supra-glottic; and many other conditions besides the foregoing, variously influencing phonation, and producing partial or complete aphonia, whether functional or organic, dysphonia, hoarseness, &c.

"6th. Affections of the trachea and bronchial tubes, as ulceration from tuberculosis or otherwise, exposing the rings; follicular enlargement; hypersecretion and dryness; tumours and growths of various kinds and consistence; puckering of the mucous folds, especially immediately below the origin of the true vocal cords; and flattening, straightening, or bulging inwards of the tube by the pressure of tumours externally, or other causes.

"7th. Diseases of the nose in conjunction with the throat, more particularly at its posterior part, where the pharyngo-nasal cavity, and the recesses of the nostrils show various forms of lesion, chiefly ulceration and tumours. The membrane covering the posterior part of the turbinated bones and the floor of the nostrils is very often diseased.

"8th. Diseases of the hyoid or tongue-bone, or its articulations with the cornua of the thyroid cartilage. These I have shown, in a



special monograph, to be numerous, important, scarcely understood or at all recognised, and yet they explain many anomalous symptoms which have been erroneously referred to other parts.

"9th. Necrosis, calcification, and other diseases of the true or larger cartilages of the larynx, namely, the cricoid and thyroid, with their occasional expulsion. Or again, premature calcareous and atheromatous conversions, giving the voice a cranky, aged, feeble, or shaky-brassy sound, which can sometimes be made out beforehand by the *atheromatous*, or a mixture of the *atheromatous* and *calcareous expressions* of the countenance. It is in this class of cases, but especially where the *atheromatous expression* exists in its typical form, that we meet with what I have elsewhere described as the 'saccharine throat.'

"10th. Foreign bodies in the larynx and trachea.

"This general classification shows the extent and importance of the diseases which the laryngoscope helps us to understand and to treat. The list might be much extended, but sufficient is mentioned in the present essay to show the student and practitioner the scope and range of vision which are submitted to the laryngeal mirror."

#### ART. 112.—*Suggestions for facilitating the Use of the Laryngoscope.*

By Dr. GEORGE JOHNSON, Professor of Medicine in King's College ; Physician to King's College Hospital.

(*Medical Times and Gazette*, Feb. 14, 1863.)

The use of the laryngoscope being unquestionably of great practical value in the investigation and treatment of diseases of the throat and larynx, every suggestion tending to facilitate the application of the instrument, and so to render its use more general and more successful, is worthy of attention. Dr. Johnson makes his "suggestions" in the following words:—

"1. *On the Position of the Concave Reflector.*—Hitherto, in whatever way the reflector has been supported, whether between the teeth, or in a spectacle frame, or on a band passing round the head, the practice, so far as I know, has always been to retain the reflector in front of one eye—usually the right eye—and the observer has looked into the throat, either with the one eye applied to the central opening in the reflector, or he has used only the uncovered eye; or he may, perhaps, have succeeded in using both eyes. Every manipulator, however, must have experienced a degree of discomfort and inconvenience, resulting from one eye being kept behind the reflector, and from the effort required to keep the eye adjusted to the aperture; more especially is this found to be inconvenient and troublesome when both hands have to be used in the performance of any operation on the throat. The discomfort and inconvenience here referred to are completely obviated by the plan, which I have

recently adopted, of having the reflector so attached to the frontal band that it shall come to the middle of the forehead, and leave both eyes uncovered, as in the accompanying diagram. I am not aware that there is the least advantage to be gained by peering through a hole in the reflector. On the other hand, the advantages resulting from having the reflector in the position here indicated are that the manipulator, having the free and unrestrained use of both eyes, finds it much easier to direct the light into the patient's throat, to keep the faucial mirror in the required position; and, in short, to do everything for the performance of which two eyes are more helpful than one. The reflector can be fixed in the position represented in the diagram by shortening the hook which attaches it to the frontal



band. This can be done with the greatest ease. I made the alteration in my own instrument with a file and a pair of pincers in about five minutes. With the reflector on the forehead there is no need for the central hole. The manufacture of the instrument, therefore, may be more simple, and in the same degree less costly.

"2. *A Darkened Room is not Necessary for Satisfactory Laryngoscopic Examinations.*—I am in the habit of examining patients in the wards of the hospital with only such a moderate exclusion of light as is to be obtained by drawing down the blinds of one or two of the nearest windows. The illumination of the throat certainly is easier and better with a good light in a dark room, but, since a darkened room is not <sup>so</sup> had, it is important to be able to

make a satisfactory examination of the larynx in a room which is not completely darkened. All observers agree that the light of the sun, when it can be obtained, is the best means of illuminating the throat.

"3. I have found, as others must have done, that the concave reflector is invaluable as a means of illuminating the throat, for the purpose of examining the tonsils, palate, and pharynx. Placing a candle or a lamp on a table by the side of the patient, the operator, with the reflector on his forehead, throws the light into the throat, and has both his hands free to do whatever requires to be done—to depress the tongue, to apply caustic or other local remedies, &c.

"4. *Since the preceding was written, I have devised a simple and very satisfactory method of autolaryngoscopy.*

"Sitting at a table of a convenient height, I place a common dressing-table looking-glass at a distance of about eighteen inches in front of me, and a moderator or gas lamp at one side of the glass, but three or four inches further back, so that no light may pass directly from the lamp to the mirror. Now, with the concave reflector on my forehead, as before described and represented, I throw the light from the lamp, as it were, into the open mouth of my own image in the looking-glass; then introducing the faucial mirror, I at once see the reflection of my larynx in the glass before me, and anyone looking over either of my shoulders can see the image at the same time. This method, therefore, serves for autolaryngoscopy and for demonstration: in plain English, the experimenter can thus see his own larynx and show it to others; and the method here described possesses some advantages over that employed with such wonderful success by my friend Professor Czermak.

"I find that, while holding the faucial mirror with my right hand, and changing the position of my head and neck so as to obtain different views of the larynx, I can keep the light directed where it is required by adjusting the frontal reflector with my left hand. This cannot readily be done with Professor Czermak's apparatus, on account of the distance at which the reflector is fixed.

"This method of autolaryngoscopy requires a greater angular movement of the frontal reflector downwards than is needed in the ordinary examination of a patient. In order to give this free movement, and to prevent the lower margin of the reflector from coming in contact with the nose, I have found it convenient to throw the reflector forwards from the forehead, by placing a small moveable pad or cushion, about half an inch thick, between the forehead and the frontal band to which the reflector is fixed."

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## (B) CONCERNING THE CHEST AND ABDOMEN.

ART. 113.—*On Treatment of Disease of the Spine and Angular Curvature.*

By Mr. WILLIAM ADAMS, Surgeon to the Royal Orthopædic Hospital, &amp;c.

(Lancet, December 12, 1863.)

In a paper on this subject, communicated to the Medical Society of London, the author commenced by adverting to several points in the general pathology of the destructive disease of the spinal column described as caries and necrosis of the bodies of the vertebræ, and ulceration of the intervertebral cartilages, frequently described as "Pott's disease of the spine," which generally results in angular curvature. Children between the ages of three and twelve years are most frequently the subjects of this disease; it is also seen in young adults, but rarely after the middle period of life. The author considered the disease to be essentially of constitutional origin, and occurring in strumous subjects, although frequently excited by a blow, rick, or some other accident; but its constitutional character should be steadily borne in mind throughout the treatment of the case.

Mr. Adams next drew attention to what he described as the natural history of the disease when allowed to pursue its course unchecked by any medical or surgical aid, as may be seen in hundreds of cases amongst the poor; and stated that about two hundred cases of this disease were admitted annually as patients at the Royal Orthopædic Hospital. The following questions were then suggested:—

1st. Is it a fatal disease in any large proportion of cases?

2nd. What is its average duration?

3rd. What is its usual termination?

After mentioning the impossibility of answering these questions with the degree of accuracy that could be desired, Mr. Adams stated his opinion that the mortality produced directly by the disease is very small, not amounting to more than from five to ten per cent.

With regard to the average duration of the disease, he considered that it was seldom arrested under two years, whilst in many cases it continued in progress during a period of five years or more; so that about three years might probably be regarded as the average duration of this disease. But there was a difficulty in deciding this point in a disease in which the beginning and the end were wrapped in the greatest uncertainty.

As to the usual result of this malady, the author considered that it generally terminated in bony ankylosis at the seat of the disease, accompanied with more or less external deformity, including persistent angular curvature of the spine, with distortion of the chest, &c., in many instances.

For practical purposes in reference to treatment, the author suggested that the disease might be divided into three stages—

The first stage being previous to the formation of angular curvature, or any marked posterior projection of the spinous processes.

The second stage, when angular curvature coexists with advancing disease, with or without external abscess.

The third stage, that of deformity remaining after arrest of the disease, and bony ankylosis.

With respect to the treatment in the first stage, the author observed that the opportunity was very seldom afforded for any treatment whatever, because we had no certain means of diagnosis; and in a very large proportion of cases disease of the spine was not even suspected until it had advanced to the second stage. The period occupied by this obscure first stage varied from six months to a year or more: this would be undoubtedly the hopeful period for arresting or curing the disease if the diagnosis could be made, which in children it very rarely could be, although in adults the difficulty was not so great. Theoretically, this was the stage during which counter-irritation, in some form or other, and complete recumbency, were indicated, and might be practised in proportion to the certainty of the diagnosis.

With regard to the treatment in the second stage, the greatest difference of opinion exists upon three points:—

1st. The necessity of absolute rest—i.e., the recumbent position in bed.

2nd. The advantage to be derived from counter-irritation, either by issues, blisters, the moxa, or the actual cautery.

3rd. The propriety of mechanical support.

No difference of opinion exists with regard to the constitutional treatment, as the essentially strumous nature of the affection is universally recognised, and the advantage of cod-liver oil, iron, quinine, and other tonics is generally admitted. Mr. Adams had found much advantage from the use of hypophosphite of lime, and a liberal supply of port wine. The author observed that on the continent absolute rest and severe counter-irritation are generally employed; and the same may be said for the treatment in Scotland, where the actual cautery is still much in use. In England the rule of practice is absolute rest, with mild counter-irritation, blisters being generally used; but still issues are frequently employed by some of the leading surgeons. Mechanical support is very generally ignored, both on the continent and in this country, during the progress of the disease; and this is one of the points to which the author desired especially to draw the attention of the members of the society, as his own experience had led him to believe that mechanical support may be most advantageously employed during the progress of the disease, and especially in the second stage. Mr. Adams stated that his rule of practice is always to allow the feelings and inclinations of the patient to be the guide as to the advisability of allowing a moderate amount of exercise to be taken when the spine is firmly supported by a spinal instrument. The spinal support which he

employs in young children consists of a piece of thick leather accurately moulded to the form of the back, and fastened in front by elastic india-rubber material. A light steel crutch is attached to the leather on either side. In older children and young adults he employs a steel spinal instrument, with a posterior pad made to move by a cog-wheel from the pelvic belt.

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**ART. 114.**—*Case of Aneurism of the Abdominal Aorta, which was cured by Compression of the Artery immediately above the Tumour.*

By Dr. MURRAY.

(*Proceedings of the Royal Medico-Chirurgical Society, May 24, 1864.*)

Commenting upon this very remarkable case, Dr. Murray says:—  
 “We note in the first place that here we have a complete triumph for the advocates of compression in the treatment of aneurism, for a hitherto fatal disease has yielded to treatment lasting but a few hours, and requiring the use of a very simple expedient. Secondly, here is proof that the aorta can be blocked without violent symptoms or great inconvenience ensuing; and, lastly, it adds another instance of the value of chloroform, without which the tremendous pressure here used could never have been borne, even though it were to save the patient's life.”

**CASE.**—The patient is a spare man, aged twenty-six years. His occupation as a paviour has required him to use a large wooden rammer for driving paving-stones into the ground. Often in making strenuous exertions he has overreached himself, and subjected the trunk of his body to severe straining. Eleven months ago after hard work he was seized with severe pain in the back. Two months later the same pain began to be felt in the abdomen, catching his breath, and very severe. About two months ago he began to feel a beating in his belly, and shortly afterwards became a patient at the Newcastle-on-Tyne Dispensary, under Dr. William Murray, who, after a few examinations, became convinced that he had an aneurism of the abdominal aorta. This opinion was shared by the medical officer of the dispensary. The following was the condition of the patient previous to the treatment:—His abdomen somewhat spare, so that a distinct pulsation can be seen opposite the umbilicus. On applying the hand a hard, and slightly moveable tumour, of a distinctly globular form, is to be felt. It pulsates very strongly, and the pulsations impinge upon the hand with a sudden stroke, and the expansion of the tumour very distinctly separates the hands when applied to it. The tumour is about the size of a large orange; when “the pressure” is made on the aorta above it all pulsation ceases, and when it is removed a distinct thrill is felt to accompany the rush of blood into the tumour. A slight bruit is heard over the tumour. (A line drawn across the abdomen over the umbilicus touches at either end the margin of the last rib, and encloses between the free borders of the ribs a triangular space—the epigastric region. Over the left half of this space there is just room enough above the tumour to compress the aorta against the spine.) The aorta below the tumour can be felt, and its pulsations seem in no way to depart from their normal characters. Bowels slightly consti-

pated. Pulse good and normal. General health good ; but he is worn out with pain and consequent loss of sleep. No evidence of degeneration of arterial system. All palliative treatment having failed to relieve him, I proposed to apply a tourniquet (an ordinary horse-shoe tourniquet) above the aneurism, and thus attempt to cure by compression. It happened, as I have before shown, that the aorta could be compressed above the tumour ; and this was most completely accomplished by the tourniquet, one blade of which was applied over the spine and the other over the spot above indicated. Having taken my patient to the Northumberland and Durham Medical Society, I obtained there from the president (Dr. Heath) and others ample confirmation of my diagnosis ; at the same time I proposed my plan of treatment.

On Saturday, April 16th, the patient was put under the influence of chloroform, pressure by means of the tourniquet was kept up for two hours. On removing the pressure, no apparent effect had been produced. The pressure completely commanded pulsation in the tumour, except during occasional momentary displacement of the instrument.

After an urgent entreaty on my part, the patient submitted to the treatment on Tuesday, April 19th. After careful re-examination by Dr. Heath and myself, it was concluded once more that there could be no reasonable doubt of the nature of the disease. The pressure was again used and maintained, with but momentary intermissions, when the instrument became displaced, but even these were avoided during the last hour, as I carefully held the instrument in its place, and had the patient very fully under the influence of chloroform. After about five hours the pressure was removed, and its removal showed that now very little pulsation existed in the tumour. Beyond a little shivering and numbness, with coldness of the feet and legs, nothing of an untoward nature followed. In the evening, after a most careful examination, I failed to detect the slightest pulsation in the tumour or in the aorta below it.

On Wednesday, April 20th, the patient was restless and sore ; legs felt numb, and a sensation of pins and needles in the feet. In consultation with Dr. Heath, the following observations were made and confirmed by that gentleman :—"There is no pulsation in the tumour, which is now perfectly stationary, hard, resistant, and lessened in size ; nor are any pulsations to be felt in the aorta below the tumour, in the iliacs, or femoral arteries."

Thursday, April 21st.—The patient is much better. Says he is more free from pain than he has been for several months. No pulsation in tumour or femoral. Pulses can be felt at one or two points in the abdominal wall.

Friday, 22nd.—With Mr. Lightfoot, who carefully examined the case, the following points were made out, and verified by that gentleman :—"A solid hard tumour, of about the size of an apple, lying to the left of the umbilicus, can be felt, and during deep expiration can be seen. It is motionless to the eye, and by the hand the slightest possible forward movement can be distinguished at its upper border, as if communicated from the aorta pulsating above." No expansile movement, thrill, or bruit can be made out. All numbness is gone from the legs, and the patient declares he is quite well.

Monday, 25th.—Still improving ; is moving about freely. No pain since treatment. The tumour is now much diminished in size, and no pulsation can be distinguished in it. The patient has been out this morning, and walked about a quarter of a mile. His legs failed him once or twice during his walk, owing, he says, to a sensation of numbness in them. When his exercise terminated he felt a numbness from the umbilicus downwards for

several minutes. Several medical gentlemen examined him at this period, and their unanimous conclusion was that all pulsation had ceased in the aorta and the large arteries below the tumour. Among these were Dr. Gibb, Messrs. Fips and Armstrong, Mr. Rayne, &c.

May 1st.—Patient still improving, and walking in the open air daily. No pain or pulsation.

May 5th.—Patient still improving; has been out for three hours, and walked a considerable distance without other discomfort than slight weakness and numbness in legs. The most careful examination in the presence of several medical gentlemen fails to detect any movement in tumour, which is now hard and further diminished in size.

May 9th.—Everything in a most satisfactory state.

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ART. 115.—*Four Cases of Intestinal Obstruction, in Three of which the Colon was opened in the Left Lumbar Region. (Amassat's Operation.)*

By Mr. SAMUEL SOLLY, Surgeon to St. Thomas's Hospital, &c.

(*Medical Times and Gazette*, April 23, 1864.)

In a paper read before the Medico-Chirurgical Society, Mr. Solly, after acknowledging the value of Mr. Cæsar Hawkins's contributions to the subject, proceeded to detail his own experience. The operation of opening the colon in the loin in properly selected cases, he believed to be neither dangerous nor difficult; nor was it contra-indicated by the occasional passage of small quantities of fæculent matter. The results, moreover, of the operation were far from unfavourable even where the stricture was due to malignant disease, and the relief afforded was so instant and decided as in the interest of humanity imperatively to call for surgical interference. The first case, that of a labourer, aged twenty-eight, was one of rectal cancer, advancing with unusual rapidity, and dating only five months from admission. At the onset, diarrhœa, with slimy and bloody motions, was followed by intermittent symptoms of obstruction, which before long became constant. On admission, the abdomen was frightfully distended; the rectum did not admit the passage of even a small elastic catheter. Three days after, the descending colon was opened in the left lumbar region. Much flatus escaped, but hardly any fæces until some hours after the operation. This was followed by rapid improvement in every respect. Sixteen days later the patient left his bed, wearing a tent in the wound, and continued in fair health for three months, when chronic peritonitis set in, probably from extension of the primary disease, and slowly advanced to a fatal termination. The second case, that of a railway clerk, was of eighteen months' standing. It had been very gradual in its access, and during the last month some good had been done by the use of rectum bougies. On admission, the symptoms, both local and general, were very severe. At the operation much fæculent matter was evacuated, and the relief obtained was very decided, lasting for six



weeks, when sudden collapse, partially due to mental causes, was very rapidly followed by death. Post-mortem examination was refused. The third case had occurred very recently. A bank-cashier, aged fifty-four, of active and temperate habits, had begun about a year previously to suffer from constant tenesmus, with from five to seven evacuations daily; these were on three or four occasions accompanied by blood. Seven months later he consulted Mr. Solly, and extensive carcinoma was found partially occluding the bowel. During the following five months he could evacuate the bowel without much distress; but at the commencement of the present year complete obstruction took place, accompanied by great distension of the abdomen, for which, ten days later, he was admitted into St. Thomas's Hospital. On admission he complained of dyspnoea and retching, but without actual vomiting. A nodular mass could be felt projecting into the rectum, hard and inelastic, almost obliterating the canal. The following day an incision was made midway between the last rib and the iliac crest, horizontal, with a slight inclination upwards and outwards, from three inches and a half to four inches long. The erector spino-*rum* was partially divided, and then the quadratus lumborum inwards, on a director, to the extent of an inch and a half. The abdominal fascia was similarly treated, leaving the bowel exposed; this was fixed by means of two silk sutures to the edges of the wound, and the gut opened transversely by means of scissors. Very little blood was lost, and three pints of liquid *fæces* came away, with intense relief. During the afternoon more liquid *fæcal* matter was discharged per anum. On the following day the pulse was 86; he had slept well, and eaten a chop for dinner. The wound showed no inclination to close, and slight prolapse of the bowel was easily checked by an oiled sponge plug. For six days he did very well, except that there was a tendency to the formation of bed-sores. Thirteen days after the operation he sat up two hours daily, and seemed better, *fæces* passing both by the wound and anus. But on the twenty-first day collapse, vomiting, and swelling of the face came on, followed by great dyspnoea and extensive mucous crepitation in the chest, which increased so rapidly as to carry him off in a few hours. At a post-mortem examination, tubercle was found in both lungs, which were oedematous, with much injection of the bronchial tubes. The cæcum was distended by gas, and was adherent to the sheath of the right psoas muscle, in which was an abscess extending to its origin, containing several ounces of thin *fœtid* pus. There was a free opening in the descending colon, where it was uncovered by peritoneum, and its edges were adherent to the wound. The sigmoid flexure contained solid *fæcal* matter. The rectum was imbedded in a firm mass of infiltrated tissues, adherent to the pelvis posteriorly and to the bladder in front. The deposit was firm, fibrous, and juicy. A softer growth projected inwards round the whole circumference of the bowel, so as almost entirely to obstruct it; below the tumour was an ulcerated surface of the intestines, two or more inches across, where the coats of the bowel were entirely destroyed. The scirrhus mass under the microscope showed fibrous tissue, with cells of various sizes, mostly

round, and containing minute oil-globules. The liver contained several masses of scirrhus, most of them presenting traces of central degeneration. The fourth case resembled the preceding up to a certain point, where it diverged in consequence of the operation not having been performed, and the patient dying rapidly from rupture of the bowel. W. C., aged fifty-five, a member of the College of Surgeons, was a ruddy and robust man, of very active habits, subject to no illness except occasional attacks of gout. In April, 1863, he had a severe attack of what he termed colic, for which his father-in-law, a retired practitioner, successfully treated him. Even at that period Mr. Solly saw reason to diagnose stricture of the large intestine, though the patient attributed his symptoms to gout, and did not formally request his advice until two months later. On a first visit he was in great pain, and the abdomen was so tender as to preclude close examination. Palliative treatment mitigated the symptoms for a fortnight, and then the author was again hastily summoned to Tunbridge Wells. Examination of the rectum by means of the finger and a soft bougie revealed an obstruction at its upper part. The abdomen was intensely distended with flatus, although small quantities of fæcal matter were once or twice evacuated. It was suggested to open the descending colon in the left lumbar region, but postponed for the opinion of an eminent surgeon, who came to the conclusion that it was not desirable. Accordingly Mr. Solly unwillingly relinquished his proposal under protest. Within twenty-four hours the patient died in great agony, with symptoms of ruptured bowel. On post-mortem examination, the abdomen was tense, and prominent above the umbilicus. The lower part of the descending colon presented a small perforation, from which half an ounce of fæcal matter had escaped. There were no signs of recent peritonitis; and the intestines were healthy, except at the sigmoid flexure, where a mass occupied the interior of the gut, of a scirrhus hardness, measuring over three inches across. Several pulpy, lobulated portions of this occupied the calibre of the tube, fitting into each other like cogs of wheels. No other morbid condition was found. Before opening the abdomen a trocar had been introduced at the spot where the proposed operation would have been performed, and its point was found in the intestine an inch and a half above the diseased mass. In commenting on this case, it was noticed that death had obviously been the result of obstruction, not of any rapid malignant growth, and that life would undoubtedly have been prolonged by the operation for an indefinite period. Moreover, the valvular form of the obstacle was pointed out, and the possibility of the original channel becoming pervious when the accumulation above was removed by operation, as had actually occurred in the third case. Lastly, attention was directed to the fact, already noticed by Mr. Quain, in his work on this subject, that obstruction might be complete and prove fatal even when the autopsy did not exhibit total occlusion of the intestinal canal.

ART. 116.—*On Truss-Pressure in Inguinal Hernia.*

By Mr. JOHN WOOD.

*(Medical Times and Gazette, February 27, 1864.)*

In one of a series of papers on rupture Mr. Wood makes the following instructive observations and suggestions upon truss-pads and truss-pressure:—

“The theoretic perfection of a truss-pad would be one which would fulfil four indications—viz., 1st. To oppose resistance to the first egress of the bowel through the deep ring, by flat pressure over its site. 2nd. To press firmly upon the outer pillar and Poupart's ligament, so as to prevent their yielding before the tumour. 3rd. To press firmly and independently upon the upper wall of the canal, lying behind and above the inner pillar; and, lastly, to leave the axis of the canal and the superficial opening uninvaginated and not stuffed out by the front coverings of the rupture.

“The ordinary neglect of these indications has led to the practice of putting on convex truss-pads, under the use of which the hernial openings are continually widened by invagination of the skin and front coverings of the hernia, giving rise to a gradual increase of the rupture in size, as noticed each time it is suffered to come down. The constant wearing of the truss, with the view of producing a cure by gradually lessening the rupture and closing its openings, thus produces the very opposite effect of enlarging them. This effect is much increased by the constant boring or lateral motion of the side spring during walking in those trusses which have no joint between it and the pad.

“To meet these requirements, I devised a truss-pad for oblique hernia, having a perfectly flat surface, rounded off at the edges, and arranged in the shape of an oblique horse-shoe, with one end longer than the other. The bow of the bend is placed over the deep opening of the rupture, and the two ends over the two pillars of the ring, respectively following their several directions and obliquities. The cleft or fissure is placed over the axis of the canal and superficial ring. This truss-pad has the additional advantages of permitting the cord to emerge over the pubis without being subjected to pressure, by placing it within or under the cleft. The ends of the pad are also placed on each side of the pubic spine, so as to avoid a source of annoyance resulting from chafing of the skin over this bony projection, which is so commonly experienced in wearing the ordinary pads.

“For direct hernia, also, I have devised an ovoid ring pad, with a flat bearing margin, intended to surround the margins of the direct opening, and to prevent their dilatation without invaginating the front coverings of the rupture into the hernial aperture. The hole in this pad (like the cleft in the horse-shoe) permits of a certain degree of projection of the skin into it, sufficient to fix and hold it from shifting under the pressure of the side spring or belt, without at the same time permitting the sac or bowel to project, for which a much

wider interval would be necessary. These pads, in fact, effect, as nearly as mechanical appliances can do, what the fingers of the surgeon do when he is holding up the rupture of a patient without invaginating the sac. For ordinary purposes, these pads may be made of boxwood well smoothed off. I have now a great many such in use, both upon patients who have been operated on for the radical cure (after which I consider their temporary use to be essential to support the newly-formed adhesions, without causing their absorption), and upon others who have objected to an operation, or in whom I have considered it inadvisable. They keep their places quite as well as the common pads, and have kept up ruptures which no other truss has been able to accomplish.

"An india-rubber water-cushion may be fitted to the surface of these pads, which will relieve the skin under their immediate pressure, in cases where this is necessary. Mr. Matthews, of Portugal-street, has fitted some for me latterly, which have been very satisfactory. In infants, the pad so protected may be fastened to the body and thigh by an elastic figure-of-eight band, of sufficient power to retain the rupture without being liable to shift or to interfere with cleanliness or the movements of the child.

"In special cases I have had recourse to a lever-spring within the pad itself, acting by two moveable ends at the lower part upon a joint at the upper part, in conjunction with the pressure of the side spring or belt. By means of these pad springs we obtain an increased pressure at the lower end of the pad, which enables us to overcome some of the difficulties arising from a protuberant abdomen or projecting hips, as well as those resulting from a peculiar direction of force in the rupture itself. These pads have been worn in many very difficult cases with the best possible results. In some adult cases I have watched, a decided diminution of the size of the rupture has ensued.

"It is, however, a matter of common remark, that few cases of cure, comparatively with the number of cases and trusses worn, have resulted from treatment by pressure only, even in the young, and how very rarely such a result ensues in the adult ruptures. In difficult and large cases I have employed a truss-pad split into two halves for independent pressure upon the two pillars. Each half is acted upon by the separate ends of a spring going round the hips like a double truss. The twin halves are connected with each other by an elastic or leather strap."

ART. 117.—*A Case in which the Left Ovary was found in the Sac of an Oblique Inguinal Hernia.*

By Mr. HOLMES COOTE, Surgeon to St. Bartholomew's Hospital.

(Proceedings of the Royal Medico-Chirurgical Society, Jan. 26, 1864.)

CASE.—A young woman was brought into St. Bartholomew's Hospital with a swelling in the left groin, and suffering from the symptoms of stran-

gulated hernia. In the course of a few hours the usual operation was performed, when the ovary and the Fallopian tube were found in the sac. A similar malposition of parts was subsequently noticed on the opposite side of the body. The left ovary was removed, some thickened omentum cut away, and the patient was put to bed; but the sickness and constipation continued, and she died four days after the operation. The cause of the sickness, &c., was displacement of the stomach and transverse arch of the colon.

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ART. 118.—*On Lithotrity without Injections.*

By Mr. HENRY THOMPSON, Surgeon to University College Hospital, &c.

(*Lancet*, February 20, 1864.)

During the last few years, with few exceptions, Mr. Thompson has always performed lithotomy without any preliminary injection, and almost without any injection after the sitting; and in this practice he has not been peculiar, for, from sundry letters which have appeared in the *Lancet* subsequently, it seems that Mr. Teale, Mr. Pollock, and some other surgeons, have for some time back discontinued injections. Mr. Thompson writes:—

“Hitherto all operators have agreed in recommending that the urine should be first withdrawn, and that from four to six ounces of warm water should be injected into the bladder before introducing the lithotrite for the purpose of crushing the stone. It has been assumed that the presence of at least that quantity is essential to protect the walls of the organ from injury when the lithotrite is opened and closed. And further, it has been considered desirable that the fluid should be present in *known* quantity. Hence lithotrity has often been regarded as inadmissible in a case where the bladder has been so irritable as to contain only an ounce or two of urine; and lithotomy, or a prolonged course of sedatives, baths, and injections, usually ending in disappointment, has been resorted to with the view of enabling the bladder to retain the orthodox “four to six ounces.”

“I am quite sure that this quantity is unnecessary. Of late I have been content with two or three ounces, and, taking proper precautions, have crushed with the best results in an ounce of fluid. Neither does it appear necessary to know the exact quantity before commencing; for on first opening the lithotrite in the bladder, which the operator does very gently as feeling his way, the amount of space available for his manipulations is at once manifest. Moreover, space in the bladder does not necessarily correspond with the presence of some fixed quantity of water therein. In some conditions of the bladder—or, to speak more accurately perhaps, in some bladders—two or three ounces afford as good a working area as five or six ounces in others.

“It may be said—What is gained by the omission to inject? A very considerable advantage. It appeared to me very early in my

experience of lithotritry, practised by others as well as by myself, that most of the untoward occurrences met with arise either from too much or too rough manipulation, and that any step towards the improvement of the operation must for the most part be made by diminishing the amount of instrumental contact with the bladder and urethra. Hence, instead of introducing a catheter to draw off the patient's urine, and applying a syringe to inject a known quantity of water, I asked the patient to retain the urine for a little less than his accustomed period before the sitting; that is, if naturally he was able to retain his urine for about an hour, he was requested to pass it forty minutes before the time of the visit. The lithotrite was then at once introduced, and the crushing proceeded with. It is certainly undesirable to operate when the patient is urgently wishing to pass urine; hence it is as well to commence rather too soon than too long after the last act of micturition. In this manner the operator deals with a bladder not yet aroused to action, as it is sure to be when a catheter has been introduced, and when, moreover, the viscous has been unnaturally distended; for however slowly and gently a syringe of liquid is thrown into the bladder, such injection is more irritating than the oozing in of the natural secretion by the ureters. An entire "sitting," then, consists in introducing the lithotrite; in crushing the calculus five or six or a smaller number of times, for which two or three minutes is a sufficient period; and in withdrawing the instrument.

"Such may be regarded as the rule of practice. But when the bladder is much atonied, its coats being deficient in tone, and a large portion of urine remains behind after each act of micturition, it is mostly advantageous to empty the bladder, and inject a few ounces of cool water. The stimulus of water at 60° or 70° Fahr. sometimes gives tone for a time to the muscular coats, and so aids in producing a better-formed cavity for operating in than a capacious, atonied, and flaccid bladder presents.

"Next, in reference to injections made subsequently to the crushing of the stone, little or nothing appears to be gained by their employment. Three or four rapid injections through a large evacuating catheter generally cause more distress, and are certainly calculated to do more mischief, than the operation of crushing. Besides, it is not the best time to make them in relation to the object of their application. If used at all, it should be after nature has been allowed a period of three or four days at least in which to expel the *débris*. It is a remarkable power that which the urinary apparatus possesses of expelling foreign bodies, not only from the cavity of the bladder, but from the innermost termination of the organs in the kidney, and it appears perhaps to be scarcely enough relied on by some operators. It is a most happy provision for the safety of the individual, and, after all, relieves humanity of an infinitely greater number of stones than the surgeon does. He only comes in to remedy the exceptional failures of Nature. I like to feel how efficient an ally there is for the lithotritist in this said power, and to leave the expulsion of the *débris*, when properly pulverized, very admirably adjusted arrangements

existing for the purpose; and my experience of their capability in this respect is considerable and satisfactory. Only, when it fails, we must, as before, step in to aid Nature again, and promptly.

"On referring to my case-book, I find, in relation to the first question, that I have crushed upwards of a hundred times without using a preliminary injection; and, in relation to the second question, that I have completed successfully eleven cases of lithotrity, most of them recent, without once using the evacuating sound. The *débris* have been easily and entirely expelled by the natural powers of the patient."

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ART. 119.—*On the Structure of Indurated Chancre of the Prepuce.*

By M. ORDONEZ.

(*Gaz. Méd. de Paris*, Oct., 1863.)

In a paper read before the Société de Biologie in Paris, M. Ordonez has given the following summary of the appearances observed by him on making a histological examination of indurated chancre:—

1. The epidermis is considerably thickened around the ulcerated part. The most superficial cells all present a central nucleus, tolerably large, with from one to four nucleoli; contrary to what is met with in healthy epidermis, where the cells lose their nuclei as they approach the external surface of the skin.

2. The interpapillary digitations in the true skin are larger at the level of the chancre than in the healthy skin. The epithelial cells are very closely packed, larger than in the normal state, and infiltrated by a very transparent fluid, coagulable by alcohol.

3. At the level of the papillary layer of the skin, small hæmorrhagic clots may readily be detected, produced, no doubt, by the rupture of the small capillary loops distributed in the papillæ. Hæmosine, mixed with red corpuscles in various stages of change, is effused in patches, between the papillary and the mucous layers.

4. The meshes of the cutis vera, from the papillary layer to its deepest portion, are infiltrated with a large quantity of plastic lymph. On merely making thin slices of the chancre, a large quantity of a very transparent, slightly viscid fluid, coagulating slowly on contact with the air, may be made to escape by pressure or by the action of the cutting instrument. This liquid, examined microscopically and with the aid of reagents, appears to be plastic lymph, or blastema.

5. The papillæ are increased in size, without being altered in shape. They are infiltrated with a large number of embryonic or transitory elements of the fibrous or connective tissue. These consist of round or oval nuclei, varying in diameter from  $\cdot 00016$  to  $\cdot 00028$  and  $\cdot 00036$  of an inch; of small fusiform, fibro-plastic bodies in an ordinary state of evolution; and of small bundles of fibres of fibrous or connective tissue in progress of formation, and still presenting nuclei.

6. In the substance of the derma is to be found a number of fibrous cords, with perfectly developed fibres, and presenting a brilliant white aspect, contrasting remarkably with the adjacent tissue. This appearance is best presented by recent sections of the induration, examined by the aid of distilled water; it is also present, but less distinct, in specimens that have been preserved in alcohol or glycerine.

M. Ordonez thinks that the alterations in the skin which he has described satisfactorily explain the peculiar induration characteristic of the infecting chancre.

ART. 120.—*On a New Method of Treating Acute Inflammation of the Testicle.*

By Mr. JAMES G. BEANEY, Surgeon to the Melbourne Hospital.

(*Medical Record of Australia*, June, 1863.)

Mr. Beane's plan of treating all stages of acute inflammation of the testicle and its coverings is by evacuating as early as possible the effused fluid contained in the tunica vaginalis, by means of a small trocar and canula. This surgeon was formerly in the habit of using a small silk seton, which was allowed to remain in forty-eight hours, and then withdrawn, but he now prefers the trocar and canula.

"When called to a patient suffering from orchitis," he says, "and complaining of intolerable pain, I direct him to stand erect, and grasping the organ, as I would in a case of hydrocele, I plunge a trocar and canula into the tunica vaginalis at the most depending part of the scrotum, and completely evacuate it. I then direct him to keep his bed, and employ a lotion of acetate of lead and opium. This generally effects a cure in six or seven days.

"This plan of treatment I find has never been practised before; the only record we have of the employment of operative measures in the treatment of the *acute* form of orchitis is the barbarous and unnecessary one originally proposed by J. L. Petit, namely, that of cutting with a bistoury through the scrotum down to the testicle, and dividing freely the tunica albuginea. This practice was subsequently revived and practised by M. Vidal de Casis, and more recently by certain American practitioners; but as yet it has found no favour at the hands of British surgeons.

"When serving with the British army in the Mediterranean, I had an opportunity of examining about twenty cases of acute orchitis, immediately after death, in the bodies of soldiers who had died from cholera whilst under special treatment, with the following results:—The tunica vaginalis was in a state of inflammation, and distended with turbid serum; the epididymis was enlarged at its lower part, and very much thickened and indurated; the testes were *slightly* enlarged, and their vessels considerably injected. We have



hitherto been taught to regard the disease under consideration as an inflammatory affection of the parenchymatous texture of the testicle, the pain being attributed to the strangulation of the inflamed organ by the unyielding nature of the tunica albuginea, but from what I have learnt of the pathology of this affection, I am inclined to consider that it is the serous covering of the testicle—the tunica vaginalis propria—that is primarily affected, the vascular condition of the testes being merely a secondary lesion. My views on this subject are more fully confirmed by the fact that immediately an outlet is made for the escape of the effused fluid the pain in the testicle at once subsides, and it will be found but *very slightly* enlarged.

"I therefore look upon the disease hitherto termed 'orchitis' as an acute inflammation of the vaginal tunic, exhibiting the same phenomena as inflammation of serous textures in other situations; thus, the redness of the skin, the hardness and swelling, together with the sickening pain felt in the testicle, are only symptoms of the distended condition of the serous investment of the testicle.

"Although I am far from expecting that puncturing the tunica vaginalis will meet with the same opposition as cutting into the knee-joint, still it is to be presumed that my theory of the nature of acute orchitis, 'as suggested by the pathological condition,' will necessarily provoke discussion, and thereby elicit a diversity of opinion; be that as it may, the successful issue of the cases which have been submitted to the proposed method of treatment will tend in a great measure to settle most conclusively the *questio vexata*."

"The pathological sequence of acute inflammation of the tunica vaginalis testis are—first, effusion of serum, which is usually turbid, and may contain flakes of lymph and blood corpuscles; it may also become purulent. Secondly, inflammation of the epididymis, involving the spermatic chord; and, lastly, the testicle, and tunica albuginea, in a more or less degree. At first I was in the habit of strictly enjoining rest in the horizontal position for a period of seven days after the evacuation of the effused fluid, but I may here observe that I only employ this plan in the *acute* stage of the affection, and not in the *sub-acute* or *relapsing* form. In the treatment of the latter variety I am in the habit of strapping the testicle immediately after tapping, and of then allowing the patient to follow his accustomed avocation."

CASE 1.—*Rheumatism, followed by acute Inflammation of Tunica Vaginalis, and effusion therein—Tapped with trocar and canula—Cured in seven days.*—Mr. W.—, aged twenty-five, a clerk, in December last, after rowing on the river on a very hot day, got chilled. This was soon followed by pain in the back and limbs. A warm bath and some colchicum and iodide of potassium were ordered, and in a few days he was well. As soon as he began to move about, pain with swelling set in, in the left testicle, which increased in intensity, and compelled him to keep his bed. When seen, the testicle was very much enlarged and very painful, and if it were allowed to hang down, vomiting was excited. I introduced a fine trocar and canula, and evacuated about five drachms of turbid serum, with immediate relief to the symptoms. Acetate of lead lotion was ordered to be kept constantly.

applied, and a dose of extract of acetate colchicum, with blue pill, and extract of henbane, to be taken. With the exception of a little pain in the side, and which lasted for about two hours after the operation, he was not troubled with any unpleasant symptoms. In seven days he returned to his office quite well.

**CASE 2.—*Acute Orchitis, tapped and cured—Relapse, retapped and strapped, followed by rapid recovery.***—Mr. L—, aged twenty-two, whilst climbing over some bales of goods, bruised one of his testicles; the pain caused thereby soon subsided, and he took no further notice of it until a few days after the occurrence, when he felt great pain in the testicle, with well-marked enlargement of the organ. He consulted me immediately, and I ordered him a suspensory bandage, a saline aperient, and a pill containing morphine and blue pill at bedtime. A few days after this I was asked to visit him, as he was unable to leave his bed; I found him suffering from all the symptoms of "orchitis," and at once emptied the tunica vaginalis, drawing off about half an ounce of bloody serum. The after treatment, the same as in the last case, was attentively observed, and in seven days he was pronounced cured; he however started on a tour in the interior, riding on horseback a good deal over a rough part of the country, and before he reached Melbourne he found his former complaint returning. He applied again to me, when I found the swelling was larger than when I saw him previously. The testicle felt very heavy, but the pain was not so excruciating as it was during the *acute* attack: on this occasion I drew off nearly an ounce of serous fluid, and tightly strapped the testicle *immediately*, and permitted him to go to his business; there was very slight enlargement of the gland left, and this disappeared in about three days. It was again strapped at the end of this time, and instructions given to him not to call on me again until the adhesive plaster became loose. In a fortnight he came, and I removed the strips, and found him quite cured, but advised him to wear a suspensory bandage for a short time.

**CASE 3.—F. G—, ætat. twenty-eight, has suffered from stricture of the urethra for seven years, the cause of which he attributes to his having used a strong injection of nitrate of silver (12 grs. to the ounce). He came under my care in January last, and has been treated by progressive dilatation. About a fortnight since I dilated his urethra, which gave him considerable pain, and two days subsequently he called at my house complaining of great pain and swelling of the right testicle; he was directed to take a warm bath, some aperient medicine, and to keep the organ suspended, with directions to call again if the swelling and pain persisted. He sent for me the next day, and told me he was much worse, the pain was considerably aggravated, and the swelling had increased. I at once introduced the trocar and canula, and emptied the tunica vaginalis, which contained about 3½ drachms of bloody serum; lead and opium lotion was kept constantly applied, and in four days he was able to go to his office, saying he felt quite well.**

**CASE 4.—W. H—, ætat. twenty-two, a short time since contracted gonorrhœa, and during the treatment of which he suffered from an acute attack of orchitis; he was leeches, and hot fomentations were applied, and as soon as the inflammatory symptoms had subsided, his testicle was "strapped," but this gave him such an amount of intolerable pain that the plasters were removed, he wore a suspender, and the testicle remained large, but free from pain. After a smart gallop across country he was seized with violent pain in the testicle, which continuing unabated for three days he sent for me. I found him in a high state of fever, with great pain, and swelling of the left testicle; as he was of a highly nervous temperament I**

administered chloroform, tapped the tunica vaginalis, and drew off about six drachms of turbid serum. I then strapped the organ very tightly, suspended the scrotum, and permitted him to go to his office; he called in five days, and pronounced himself well.

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*ART. 121.—A Hair-Pin extracted Entire from the Male Bladder by Means of the Lithrotite.*

By Mr. HENRY THOMPSON, Surgeon to University College Hospital.

(*Lancet*, November 28, 1864.)

This is not the first case in which the lithotrite has been used for the purpose of extracting bodies which have found their way accidentally into the male bladder, but not many cases of the kind have preceded it.

CASE.—On Sunday forenoon, Aug. 30th, 1863, I was summoned by my friend, Mr. R. W. Dunn, of Surrey-street, Strand, to see a gentleman aged sixty-five, residing in that neighbourhood, and said to have passed a hair-pin into his urethra. The patient's story was as follows: That while shaving that morning, seated before his wife's dressing-table and glass as usual, he had suddenly felt a violent itching some little distance down the urethra; and that he took a hair-pin, happening to be the first thing within reach, to introduce for the purpose of allaying the irritation. He held it by the two points, and passed the blunt or bent end down the canal for two or three inches; at this moment, to his great alarm, the points escaped from his grasp with a spring, entered the urethra, and were lost sight of instantly. He sent for Mr. Dunn, who, on his arrival, discovered the pin to be at least an inch and a half from the external meatus.

On my seeing the patient two or three hours after, I passed a pair of long slender urethral forceps, and discovered a hair-pin lying as described, the two points directed towards the external meatus, but at this time at least four inches and a half from it. It was evident, with the wedge-like form and spring-like action of the foreign body, that its passage towards the bladder was facilitated by every movement of the patient. Although I could grasp the pin just below either point with my forceps, the points themselves being buried deeply in the mucous membrane, it was obvious that no attempt could be made to withdraw in that direction. My first idea, therefore, was to cut the pin in two, if possible, at the bend, which would have enabled me to extract each portion separately, with ease; but, after a prolonged search at instrument-makers' and elsewhere, I could find nothing combining slenderness and strength sufficient for my purpose. I therefore decided at once to open the urethra in the perineum, as in the median operation for stone. There were present Mr. Dunn and Mr. Hedley, with Mr. George Smith and Mr. Fox, both of University College Hospital.

The patient was placed on the table, and everything was prepared. Before proceeding to give chloroform, I passed the staff, and was conscious while doing so that the pin had been carried with it into the cavity of the bladder. I immediately withdrew the staff, stating my intention to make an attempt to remove the pin by means of the lithotrite before proceeding

to cut. No chloroform, therefore, was given. I introduced a lithotrite with flat non-fenestrated blades, and had no difficulty in seizing the pin; but it was manifestly in the transverse direction, and I rejected it. I seized it again, but still not in the long axis, and again rejected it. The third time I caught one of the points of the pin longitudinally in the blades of the lithotrite, and, screwing home tightly so as to hold it securely, I carefully drew it into the neck of the bladder; then, by gently moving from side to side, I continued to draw it through the urethra (encountering only slight resistance), with the effect of gradually straightening out the other part, and thus succeeded in removing the pin entire, and in the form of a nearly straight line. It measured exactly five inches and a quarter in length.

The whole proceeding occupied about five minutes; no bleeding whatever was occasioned; the patient uttered no expression of pain, and no symptom of disturbance ensued. I did not see him again, but a day or two afterwards Mr. Dunn wrote to inform me that he was perfectly well, and had walked out, contrary to all instruction, in the evening, a few hours after the operation.

I am glad thus to have the opportunity of demonstrating what the lithotrite is capable of doing in removing foreign bodies from the bladder. At the same time I think it probable that the ingenious instruments specially contrived for the removal of hair-pins from the female bladder (a much more common receptacle for them than that of the male) might be generally the most certain means of attacking them in the latter situation also. But so much is possible with the lithotrite in such cases, that I should scarcely like to employ the special instruments until I had quite satisfied myself that the former had really failed.

# ART. 122.—*Proposed Method of extracting a Hair-Pin from the Male Urethra.*

By Mr. CHRISTOPHER HEATH, Assistant-Surgeon to, and  
Lecturer on Anatomy at, the Westminster Hospital.

(*Lancet*, January 20, 1864.)

Mr. Heath offers the following observations on the case recorded by Mr. Thompson in the preceding article:—

“From the history of the case it is obvious that had the surgeon who was first called in possessed any ready means of extracting the pin, the operation would have been of comparatively easy performance, since at that time the pin was only an inch and a half from the meatus. When Mr. Thompson saw the patient the points of the pin were four inches and a half from the meatus; so that at that time the pin had not passed beyond the bulb, nor would it have done so, probably, but for the introduction of a sound, which carried it on into the bladder. It may be concluded, therefore, that a hair-pin would not readily pass beyond the bulb of the urethra; and, taking the distance from that point to the meatus to be about six inches, and the length of the smallest-sized hair-pin two inches (in Mr. Thompson's case it was two and a half), the points will be, at the worst, about four inches down the urethra.

“From repeated experiments on the dead body, I find that it is

perfectly feasible to pinch any part of the spongy portion of the urethra so forcibly with the finger and thumb as to grasp a hair-pin firmly and bring the points together; this being done, it is only necessary to introduce a tube into the urethra, and slip it over the sharp points of the pin, when its extraction at once becomes easy. The tube I have used experimentally is a silver probe case which I carry in my pocket-case, and which is four inches long, with a diameter of one-sixth of an inch; but there is no reason why a larger and longer tube should not be employed. I find that if the hair-pin is fairly grasped and well squeezed, but little manipulation is required to slip the tube over the ends of the pin; and I imagine that even if the points were entangled in the mucous membrane, a little manipulation would free them.

"With respect to the manner of extracting the pin. If it is sufficiently near the meatus, I push the tube well down over nearly the whole length of the pin, when its own spring causes it to become fixed in the tube if the fingers are removed, and thus all difficulty is obviated. When the pin is at a greater distance, I content myself with enclosing the points, and then manipulate carefully with both hands outside the urethra, and push out pin and tube together. This could of course be obviated by having a tube a few inches longer. A tube of larger diameter would perhaps pass over the pin more readily, but would not grasp it so satisfactorily."

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(c) CONCERNING THE SUPERIOR EXTREMITY.

ART. 123.—*On Dislocations of the Thumb at the Metacarpo-Phalangeal Joint.*

By Mr. J. C. WORDSWORTH, Surgeon to the Royal London Ophthalmic Hospital, and lately Assistant-Surgeon to the London Hospital.

(*Lancet*, October 17, 1863.)

"Many years ago," says Mr. Wordsworth, "my attention was particularly directed to the subject of dislocations of the thumb and fingers, by a case that occurred in the practice of the London Hospital while I was the house-surgeon. The cause of difficulty in reducing them was so plainly illustrated in this case that I was induced to publish a short notice of it in the pages of the *Lancet*, together with two other cases that seemed to confirm my conclusions. It had been previously stated, by various writers, that the strong lateral ligaments were the obstacles to reduction; and by other surgeons the difficulty was attributed to malposition of the tendons. Amongst the latter were the late Mr. Stanley in our own country, and Messrs. Lisfranc and Dupuytren in France. At the time I wrote I was not aware that such opinions had been published; I therefore gladly avail myself of this opportunity of disclaiming any credit for my share in the elucidation of this important subject, and am content to attempt to illustrate and confirm their opinions.

"The case to which I refer was one of *compound* dislocation of the first phalanx of the thumb upon the dorsum of its metacarpal bone, in which the tendon of the long flexor was found between the ends of the bones, and thus accounted for the difficulty in restoring them to their proper positions. A second instance illustrated the subject from another point of view, by showing that in some cases the tendons are not displaced, and that reduction is then easily effected; and my third demonstrated the practicability of a procedure to overcome this difficulty, by first restoring the tendon to its proper position. I will then briefly reproduce the essentials of these three cases; for though I have had many opportunities, both in public and private practice, of confirming this view of the subject, and of testing the practical value of it by reducing dislocations which have baffled others, yet I could not cite any that afford more satisfactory data for the solution of the question.

"I gladly embrace this occasion to offer my sincere thanks to many friends, who, being aware of my interest in these cases, have afforded me numerous opportunities of seeing them; and I believe I am at liberty to state they fully approve and confirm what I have to offer on this subject."

CASE 1.—A *compound* dislocation of the first phalanx of the thumb, produced by a fall on the extended hand, the phalanx being on the dorsum of the metacarpal bone. A wound extended across, and opened, the joint on its palmar aspect. An attempt at reduction was made in the usual manner, simply by extension, and failed. A close scrutiny of the wound showed the tendon of the long flexor between the ends of the bones, having passed round the *ulnar* side of the end of the metacarpal bone, and by traction been drawn across the joint. Various attempts were made to remove the tendon from its new position without doing further mischief; but these being unsuccessful, it was divided with a bistoury. Reduction was at once accomplished, and no displacement occurred.

This case, then, sufficed to convince me of the presence of the obstacle as well as of its sufficiency, affording as it did positive proof that the tendon prevented reduction, and that as soon as it was removed no obstacle remained. I then naturally desired to know whether this dislocation ever occurs without the complication of the misplaced tendon; and if so, are such cases difficult of reduction? A little reflection on the conformation of these parts convinced me that it was not a necessary condition of the dislocation, but rather an accident depending on the force and direction of the violence that produced it. Again, I was also persuaded that it must be possible to diagnose this condition; for if the tendon remained *in situ* it would be perceptible, stretching over the end of the metacarpal bone, and drawn away from the first phalanx by the altered position of that bone. I had not long to wait for a reply to these inquiries, for my next case afforded all the information that I desired, and justified my anticipations.

CASE 2.—A simple dislocation upwards and backwards of the first phalanx of the thumb. A careful examination soon after the accident occurred, and before any attempt at reduction had been made, enabled me to decide that the tendon was *not* displaced from its position between the tubercles on the lower end of the metacarpal bone, but could be recognised as a distinct band (especially when slight traction was made) passing from bone to bone. Then, as to the reduction, slight force only was required to restore the bones to their proper positions—viz., by simple extension from the last phalanx.

Having, then, this positive and negative evidence of the difficulty arising from the interposition of the tendon, I next sought for the best means of overcoming it. I conceived that the tendon might be carried back to its proper place by manipulation merely, without having recourse to division, and so leave the structures uninjured. I therefore devised the following procedure, and determined to test its application as soon as an opportunity permitted:—The wrist being fully bent, so as to relax the long flexor tendon, let the surgeon take the thumb in one hand and abduct it from the fingers, while with the other hand he steadies the metacarpal bone. He then is to rotate the thumb, so as to make the tendon retrace its course *forwards* and *inwards* around the lower end of the metacarpal bone, using the first phalanx as a lever in this intention. If this do not succeed, let him hyper-extend the first phalanx, so as to stretch the flexor tendon, rotate the phalanx *outwards*, and then carry it round the *inner* tubercle of the metacarpal bone, so as to dislodge the tendon from between the ends of the bones.

CASE 3.—A simple dislocation of the first phalanx upon the dorsum of the metacarpal bone. No trace of the tendon could be discovered. Attempts to reduce the dislocation by extension had been made, and were renewed, that the manipulation might be fairly tested after other means had failed. The tendon was readily replaced by this means, coaptation restored, and no tendency to displacement left.

I believe that I was thus enabled to place the argument on a basis so solid and satisfactory that it is impossible to resist its validity—indeed, that my cases reduced the matter to a demonstration. I will not dogmatize so far as to insist that all difficulty arises from the cause to which I was then induced to attribute it; for I can easily conceive that cases may be complicated by the altered positions of the flexor brevis as well as by the lateral ligaments. Still, I am convinced how important it is in all scientific inquiries to be well assured of our conclusions; that we may know how to apply our science with energy and decision; and that it is both politic and philosophical to be content with *one* solution of a problem so long as it enables us to act with effect; though it is equally right that we should remain open to conviction, however satisfied we may be with our opinions, when they are shown to be either controvertible or inadequate.

Since my attention has been directed to these cases I have had much reason to believe that dislocations of the fingers at the metacarpo-phalangeal joints are also complicated by the malposition of their tendons; and, acting on this conviction, I have succeeded in reducing them by mere manipulation after considerable force had been vainly applied.

I am induced to recall the attention of the profession to this important subject from noticing that the valuable surgical works that have emanated from the press of late have not embodied or endorsed this view of the difficulties. The ligaments are still considered the principal obstacles to reduction by authors generally, though I feel assured that a more extensive observation of these cases by the great body of practical surgeons will confirm my own convictions, and lead to the adoption of a better and more successful mode of treatment.

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**ART. 124.—*An Arm torn off during the Reduction of a Dislocation.***

By M. ALPHONSE GUÉRIN.

(*Medical Times and Gazette*, April 9, 1864.)

This probably unique case was communicated to the Paris Society of Surgery soon after its occurrence :—

CASE.—A woman, aged sixty-three, entered the St. Louis Hospital for a dislocation of the shoulder of three months' date, the arm being in a state of complete paralysis. The patient having been placed under chloroform, extension was made, through the medium of bands applied above the elbow and at the wrist, by four intelligent assistants. While traction was thus being accomplished gently, a noise was suddenly heard, the separated limb fell to the ground, and the opened artery freely spirted out its blood. This was compressed and tied; the projecting end of the bone was excised, and covered over by a lateral flap which had been left when the limb was torn away. On examination, the limb was found to have separated at the elbow-joint, and every tissue, muscle, bone, vessels, &c., was found from one to the other in a soft and friable condition. The muscle separated under the pressure of the finger just as would a soft coagulum of blood; and the bones were also excessively friable. Microscopical examination further exhibited complete disintegration of the various tissues. This condition of the parts sufficiently explained the occurrence, but it remained a matter of great surprise that such changes, comprising all the tissues of the limb, should have continued latent and unrevealed by any outward sign. Neither œdema nor any trace of inflammation or suppuration was present; and prior to the accident nothing was present besides the ordinary signs of an old dislocation. The traction employed was but moderate, the assistants standing quite erect.

The reading of this case gave rise, as might be expected, to many comments.

M. Guérin attributed the production of the lesions to which alone the accident was due to the compression of the brachial plexus by the luxated head of the humerus, although M. Malgaigne does not admit that such compression takes place in sub-coracoid dislocation. M. Larrey considered that this case, at all events, was not without its analogies, for paralysis, and especially traumatic paralysis, sometimes tends to favour the occurrence of fracture through ramollissement of the osseous tissue. He had communicated to the society three cases of spontaneous fracture of the femur occurring in subjects of paraplegia. M. Voillemier, while admitting the presence of lesions which account for the accident, could not attribute them to paralysis; for if this existed, how happened it that the head of the bone remained applied beneath the coracoid process, instead of rolling from one side to the other by its own weight when no longer maintained by the contraction of muscles? M. Verneuil did not consider that the bones of the limb had undergone a sufficient alteration to constitute the essential element of the accident. This should rather be sought for in the condition of the muscles; and the employment of chloroform may have contributed to their relaxation



and defective resistance. The paralysis, however, sufficiently explains the changes observed in these organs, similar change being sometimes both rapid and extensive. In the course of six weeks the fibre may lose its properties, this implying the occurrence of a fatty transformation; so that when in a dislocation which has persisted for that period, and still more when it has continued for two or three months, the existence of paralysis is proved, the surgeon should only make attempts at reduction of a very moderate character, and continued during a short period. This case of M. Guérin should serve us as a lesson; but the most extraordinary feature about it, in M. Verneuil's opinion, is the rupture of the skin—an occurrence of which no other example is on record. M. Guérin could only refer again to the microscopical examination of the bone to prove to M. Verneuil that its structure had undergone the most complete alteration, there being, in fact, ramollissement, friability, rarefaction, and interstitial hæmorrhage. As to paralysis after luxation, it is a very common occurrence, and is rather an additional indication for the reduction of the luxation than a motive for non-intervention. M. Broca, while admitting this to be a very serious case, hoped that it would not be allowed to intimidate surgeons from attempting the reduction of old dislocations, which is good and excellent surgery. He believed, contrary to the opinion of M. Guérin, that the lesions of the osseous tissue in the separated limb were dependent on disease of this tissue anterior to the luxation, some of the microscopical appearances being only referable to an older date. Investigations which he pursued at the Salpêtrière and at the Bicêtre demonstrated to him that these changes due to ramollissement of the bones in aged persons are of only slow progress. In this case the microscopical appearances, in conjunction with the age of the patient, indicate senile ramollissement, the phenomena of senility, as is sometimes the case, being somewhat precarious in this instance. This condition is nowise inconsistent with the occurrence of dislocation rather than fracture, as the ligaments also become thin and feeble, and the muscles are relaxed.

M. Guérin's patient died a few days after the accident, the autopsy furnishing no explanation of the cause of death. No statement is given as to whether the other bones of the skeleton manifested appearances of disease.

(D) CONCERNING THE INFERIOR EXTREMITY.

ART. 125.—*Case of Amputation at the Hip-Joint.*

By Professor GROSS, Philadelphia.

(*American Journal of Medical Science*, January, 1864.)

CASE.—Margaret Thompson, aged nine years, in November, 1861, was scalded over nearly the whole of the left foot, leg, and thigh, and also on the right knee and leg, followed by extensive exfoliation of the epidermis. The affected surface, instead of healing, remained inflamed and painful. When she entered the hospital, five months before the operation, she was

extremely thin, feeble, pale, and anæmic. In January, 1862, when Professor Gross took charge of her case, she was in the most deplorable condition, frightfully emaciated, and in so much suffering as to require the constant use of anodynes. Fortunately, however, her appetite was pretty good; she ate heartily, and drank daily six ounces of brandy. The left limb was so much retracted that the knee nearly touched the chin, and the joint itself was almost completely ankylosed. In addition to this it was greatly withered, the thigh being hardly as thick as an ordinary wrist, and covered from the ankle nearly to the hip with one continuous scab, of a brownish colour, from two to four lines in depth, and exhaling the most horrible odour.

"Convinced that she could not survive many weeks longer in this condition, I requested," says Professor Gross, "a conference with my colleagues, in regard to the propriety of amputation at the hip-joint. After taking into view all the circumstances of the case, only one of them consented to share with me the responsibility of an operation. I had myself, I confess, very little hope of success; still, the knife afforded the only chance, and I therefore determined to employ it. The stench exhaled from the limb was of itself sufficient to destroy her; for no means could be found to correct it in her painful and exhausted condition.

"The operation was performed in the presence of the clinical class of the hospital, on the 29th of January, fourteen months after the receipt of her injury. The little sufferer, placed under the influence of brandy and chloroform, was apparently more dead than alive, so frightfully thin and exsanguineous was she. Important aid was rendered me during the operation by my colleagues, Drs. Agnew, Levis, and Kenderdine, in compressing the aorta and femoral artery, and in securing the divided vessels. Two flaps were formed, an anterior and a posterior, with a narrow catlin, the whole proceeding occupying less than twenty seconds. Altogether not two ounces of blood were lost. Brandy was freely administered as soon as consciousness was sufficiently restored; and in about three hours the flaps were carefully approximated by wire sutures and adhesive strips. Morphia was given to allay pain and promote sleep. Milk punch and animal broths constituted the chief diet, and were well borne by the stomach.

"Margaret slept comfortably the night after the operation, and rested well all next day, as well as the following night, taking an abundance of nourishment.

"February 1st.—This morning Dr. Keen made the following entry:—'Margaret is doing admirably; she is better than at any time since the operation—in fact, she is bright and cheerful. The wound is looking well; there is slight suppuration, but no evidence of erysipelas, which has been prevalent for some time in the house. The bowels are quiet; the sleep and appetite are good; and brandy is administered freely.'

"5th.—The case is progressing most satisfactorily. The wound, dressed two days ago, looks healthy, and discharges very slightly.

"8th.—The bowels were moved spontaneously for the first time two days ago. As there have been neuralgic pains in the stump for the last few nights, two grains of quinia were ordered to be given thrice daily. Under this treatment the suffering rapidly subsided, and the next night she enjoyed five hours of uninterrupted sleep. She ate eighteen oysters yesterday, and takes daily nine ounces of brandy in the form of milk punch.

"11th.—The wound has all healed, except a small space at the centre, where there is a little suppuration and bagging of the lower flap. The child is still greatly emaciated, but she is cheerful, and has an excellent appetite. She has been for some days taking quinia and tincture of iron. She consumes nine ounces of brandy every twenty-four hours; and is manifestly improving in strength and colour.

"15th.—The wound is nearly healed ; all the sutures have been removed, and several of the ligatures have come away.

"From this time no regular record was kept of the case. The child continued steadily to improve in health and vigour ; the discharge from the wound gradually ceased, and the stump ultimately assumed a solid, healthy aspect. The ligature of the femoral artery did not drop off until nearly three months after the operation.

"Nearly two years have now elapsed since this case fell into my hands. When Margaret was last seen, about four months ago, she was fat and stout, with a good complexion, but was evidently labouring under serious valvular disease of the heart. The stump was well formed, and in excellent condition. The right limb was much improved in muscular development and strength, but still somewhat stiff at the knee. In a word, the whole appearance of the girl was in the most striking and gratifying contrast with that which she presented prior to the amputation.

"The knee-joint of the amputated limb had been partially destroyed by inflammation. The cartilages were highly vascular, as were also those of the great trochanter and the head of the femur, the latter of which was covered by plastic deposits, partly organized, and at one point slightly ossified. The compact tissue of the femur, tibia, and fibula was abnormally thin and soft, while the areolar substance was everywhere remarkably red and injected. The periosteum exhibited no appreciable alterations.

"The circulation of the limb in this case was easily and effectually controlled by digital compression of the aorta, owing to the very flaccid and empty condition of the abdomen. As an additional security, compression was also applied to the femoral artery at Poupart's ligament."

#### ART. 126.—*On Periodical Inflammation of the Knee-Joint.*

By MR. CHARLES H. MOORE, Surgeon to the Middlesex Hospital.

(*Lancet*, April 30, 1864.)

CASE.—A woman, aged forty-three, of slender frame, and finely-formed, delicate features, but florid and healthy in appearance, came under my care in the Middlesex Hospital December 30th. Her right knee-joint was loosely swollen with fluid. The next day the fluid was almost gone, and by January 1st it had quite disappeared. The joint had begun to swell on December 27th.

Until January 5th the joint was quite well. On the 6th she felt her right foot cold two or three times, and in the course of the day a little swelling appeared in the right knee. On the 7th there was a considerable but loose swelling, and some increase of heat about the knee. She felt otherwise quite well, and her tongue, pulse, appetite, and evacuations were natural. On the 8th the synovial membrane was quite full and tense, bulging a good deal on each side of the rectus tendon, and reaching three inches above the patella. On the 9th the joint was loosely swollen again, and on the 10th was well. In the interval from the 2nd to the 5th she was quite well, and again after the 10th. A moveable body could then be felt slipping over and under the edge of the external condyle. It generally lodged below the condyle, and was invisible, but became very prominent when raised upon the bone. It gave her no inconvenience. She appeared to be in good health, and no organ could be detected to be out of order, except the spleen, which seemed by percussion to be one inch longer than is natural.

Her account was that at the age of eighteen she had had ague for six months, which was at first quotidian, afterwards tertian, and then quartan ; and that it ceased abruptly upon her taking a powder which caused copious perspiration. All her family, with whom she was then living at Dover, also suffered from ague.

She married and had some children, and her health was uninterruptedly good for eight years after the cessation of the ague. She then, eighteen years ago, found her knee become painful at the close of a busy day at household work. The joint swelled, and the swelling increased until the third day, when it subsided. She remained well until thirty days after this attack, when it was repeated, lasted precisely the same time, and then again left her perfectly well. The inflammatory swelling recurred for some considerable period at regular intervals of a month, but afterwards was repeated more frequently, returning every three weeks. About seven years ago it began to reappear every ninth day, and it continued to return without intermission or irregularity every ninth day, varying only in the hour of its onset, but not in the day. The attack was always preceded by coldness of the foot, and there was always a moderate degree of pain on the third day. She had noticed this pain to be severe if she had used the knee too much. The last attack (that from the 6th to the 10th of January, during which I had kept her in bed), was attended with less than the usual amount of pain.

She said that she had had several children since, as well as before she became subject to these recurring inflammations, and that her youngest child was about six years old. The periodical attacks had in every pregnancy ceased at the third month, and had not returned till the third month of lactation, when they recurred regularly as before. In point of time the menstruation was independent of the attacks ; it had always been healthy, and had always occurred during lactation, equally during the three months in which the attacks were interrupted as in the later period.

No other circumstance but pregnancy and lactation had exerted any influence upon the ailment. She had once been salivated for it, but without advantage.

In expectation of the attack on the evening of the 14th, I ordered a calomel and colocynth pill for the 13th, and a senna draught on the following morning. Three grains of quinine were also taken two or three times during the 14th, and some ice was applied on the knee. The attack failed to make its appearance at the expected time after the adoption of these measures, and there seemed to be some hope that it had been averted. After a few hours' delay, however, it returned, and it proved to be so violent that she said she had never had so much pain on any previous occasion. The joint became more than usually swollen, but it entirely subsided again.

I did not after this employ any further local treatment, but prescribed arsenic to be taken internally. After pursuing this plan for some time without its checking or in any way altering the course of this singular affection, she ceased to attend, and I have had no opportunity of observing or hearing of her again.

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ART. 127.—*Some Unusual Occurrences during the Cure of a Popliteal Aneurism.*

By Mr. CHARLES H. MOORE, Surgeon to the Middlesex Hospital.

(*Proceedings of the Medico-Chirurgical Society, Jan. 13, 1864.*)

The aneurism was in the calf, under cover of the gastrocnemius. It was as large as the fist, and had been observed four weeks. From the shape of the tumour, and the greater force of its beat externally, it appeared probable that the opening was on the outer side of the artery. The extent of its alternate dilatation and recoil showed that the opening was a large one. The patient, an athletic man, aged forty, had a wide arcus senilis and an audible roughness produced by the current of blood in the aorta. Genuflexion was first employed, and the beat of the aneurism was kept somewhat reduced for eight days. A tourniquet was also applied to the groin by day, and the hip flexed by night. A little diminution took place in the size of the aneurism, but the bending of the knee caused such intense pain in the sole of the foot that it could never be long continued at any angle which materially lessened the arterial impulse. That plan of treatment was accordingly abandoned. Compression of the femoral artery by two tourniquets, tightened alternately, was next made, and was continued twenty-five days. During the greater part of the same period the patient took an ounce and a half of iodide of potassium. At the end of the time mentioned the aneurism beat less, was half full of solid substance, and was larger than before; the veins of the leg were distended, the skin dusky, the tissues oedematous, and the beat of the artery on the foot imperceptible. On the next day the skin was of a bright pink colour and of high temperature, and some collateral vessels were enlarged. The aneurism seemed to be near its cure. On the twenty-seventh day of the treatment by compression sudden severe pain struck the aneurism, which was over in two minutes. The feeling at once returned in the foot, which had been painful and benumbed: and the tumour was found to have fallen in at the highest part between the heads of the gastrocnemius. The veins returned to their natural size, the artery beat again on the instep, and the enlarged collateral arteries disappeared. The hope of an imminent cure was gone. Compression was continued for three weeks longer, and the aneurism improved, but it advanced so slowly that digital compression was resorted to. It was employed occasionally for three days with manifest advantage, and a day without any pressure was accordingly allowed for the skin to recover itself. Digital compression was then made for thirty-five hours, except at intervals of two hours, when a tourniquet was tightened for half an hour. After fourteen hours' rest the femoral artery was again pressed with the fingers for twelve hours, and at the end of that time the aneurism was found to be pulseless and firm. In thirteen hours it beat again, but an hour and a half's effective pressure stopped it finally. The author re-

marks that genuflexion was inapplicable in this case on account of the pressure which happened to be made on the posterior tibial nerve by the aneurism in that posture of the limb. He thinks it not unlikely that the iodide of potassium might have facilitated the deposition of fibrin in the sac during the seventeen days in which it was taken; but he attributes to that medicine a mischievous acceleration of the pulse, which, by keeping the aneurismal sac constantly tense, occasioned its enlargement. He adds some observations upon the varying condition of the aneurism, according as the pulse was quick or slow; as well as upon the different kinds and sources of pain in the case; which observations might be of service in the study of internal aneurisms. The remarkable interruption of the cure he assigns to the detachment of a portion of the fibrin in the aneurism from a situation in which it had previously compressed the nerve, artery, and vein. Upon the removal of this pressure, and the restoration of the current of blood to its natural channels, the enlarged collateral arteries had subsided.

ART. 128.—On “*Black Leg*” amongst the *Ottawa Lumbermen*.

By Dr. JAMES O. GRANT, Physician to the General Protestant Hospital, Ottawa.

(*Medical Times and Gazette*, Dec. 26, 1863.)

CASE.—J. B.—, aged twenty-eight years, a lumberer, of strong muscular development, and generally in the enjoyment of good health. Since October, 1862, engaged making square timber, during which time his diet consisted of bread, tea, and mess pork, without any alteration, except during the last few weeks, when he was placed on a change of rice and molasses, owing to the occurrence of the following symptoms:—

June 26th, 1863.—Complained of pain, stiffness in the limbs, soreness upon pressure, and considerable swelling, in consequence of which he was unable to walk. The limbs felt quite hard, and pitted upon pressure; from the knees to the ankles the skin was more or less of a dark venous hue, and several large patches were so characteristically marked as to particularise the term “black leg,” adopted by the *voyageurs* on the Ottawa River and its tributaries. The gums are slightly swollen and livid at their edges, and bleed moderately during the mastication of food. Pulse 80, and soft; tongue clean; and the bowels regular. Urine voided in normal quantity. Owing to an apparent loss of tone in the digestive functions, ordered—*R. Quinæ disulphatis*, gr. xxiv; *acidi sulphurici aromatici*, ℥ij; *aquæ puræ ad.*, ℥viij. *Sig.*—A tablespoonful thrice daily, half an hour before food. Ordered a change of diet and an ample supply of vegetables.

July 14th.—Patient convalescent, and well as usual.

In one shanty twenty-five men out of thirty-six were attacked with this disease, and, from ascertained facts, the great proportion of the cases were developed as follows:—Slight pains in the extremities, particularly about the ankle-joints and posterior parts of the legs. After a few days, in severe cases, the pain is liable to extend to the arms and shoulder-joints. The integument of the legs is first observed to change colour, passing from a

somewhat yellow to a deep venous hue, in large patches, almost approaching to a black (hence the term). The legs and the arms are liable to swell, particularly the former. Frequently two or three weeks before any constant pain is complained of, or change of colour takes place, the limbs move sluggishly in response to the will, and considerable soreness is experienced upon pressure. Abrasion of the integument is followed by a sero-sanguinolent discharge; and, if much irritated, is liable to inflammation, partaking of the asthenic character. The limbs are said to be almost free from pain when immersed in water during the spring-season rafting; but afterwards they become hard, painful, and stiff. The gums are frequently observed swollen and spongy for some weeks before the limbs become painful. Bowels usually regular, and urine voided in normal quantity. Sleep restless. Many of the men were subject to headache, giddiness, loss of appetite, and swelling of the eyelids; also at times to a peculiar sensation, as if the head had attained enormous dimensions. During the month of April the great proportion of these cases became most marked, and under judicious treatment rarely extended over a period of four weeks before convalescence was established. It was not an unfrequent circumstance to observe, amongst those who were exposed to the same dietary influence, attacks of acute rheumatism, as well as nyctalopia, both of which readily yielded to rest and regimen, in conjunction with mild medicinal agents. Whenever nyctalopia is detected by the experienced lumberer, fresh milk is administered largely, when obtainable, which has a most speedy and salutary influence, the retina recovering its tone in the space of a few days.

This disease, from its particulars, appears to class with scorbutus, being, from all appearances, an aggravated variety, resulting not alone from a sameness of diet, but also from the influence of nitrate of potash upon the blood. This salt is largely used by the packers to preserve the pork in the summer season. During the early lumbering operations, twenty-five or thirty years ago, on the rivers Ottawa and Gatineau, the occurrence of this disease was very frequent, owing in a great measure to the extensive use of this salt of potash. The trade and experienced packers, being aware of these facts, now have recourse to this material only in moderation, an excess not being necessary to prevent putrefaction taking place, in consequence of which this disease is now seldom observed.

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### ART. 129.—*On a Case of Dislocation of the Big Toe.*

By Dr. WARLOMONT.

(*Gaz. Hebdomadaire de Méd. et Chir.*, Janvier 2, 1864.)

Accidents of this kind are very uncommon. Thus Malgaigne, in his work on fractures and dislocations, mentions only two cases of the kind; one reported by Broca, the other by Pinel.

CASE.—The patient was a lieutenant in the Guides regiment. Whilst running up a staircase in his slippers he nearly missed a stair on which the big toe of his right foot came alone to rest. Having to support the whole weight of the body, the toe gave way, and the patient fell. The result was

a dislocation forwards of the metatarso-phalangeal articulation of the big toe. There was no shortening of the toe as the dislocation was incomplete; the second phalanx was thrust forwards and upwards, the posterior edge of its articular surface resting and firmly pressing on the anterior portion of the first metatarsal bone. Its ungual extremity was turned upwards, backwards, and a little outwards towards the second toe. There was no swelling, as the accident had only happened a few minutes previously, and the pain was very trifling. Reduction was easily effected, and no unpleasant result followed.

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## PART III.—MIDWIFERY.

### MIDWIFERY AND DISEASES OF WOMEN AND CHILDREN.

#### (A) CONCERNING PREGNANCY AND PARTURITION.

#### ART. 130.—*On the Vomiting of Pregnancy.*

By Professor GUSTAV BRAUN, Vienna.

(*Zeitsch. der k.k. Gesell. der Aerzte in Wien*, Nos. 39 and 48, 1863 ; and *Edin. Med. Journal*, February, 1864.)

During pregnancy various disorders connected with the stomach manifest themselves, which may affect either its sensations or its functions. The anomalies of sensation manifest themselves as mere repugnance to ordinary articles of food, especially of what was previously preferred, sometimes by longings after unsavoury or innutritious substances. These manifestations, depending upon abnormal innervation of the vagus, are of no importance. It is different in regard to actual derangements of function, which show themselves in the form of loss of appetite, pressure in the gastric region, spasms of the œsophagus, retching and vomiting. Vomiting is sometimes one of the most obstinate and important manifestations of pregnancy, as it may impair the health of those suffering from it, or may cause an interruption to the course of the pregnancy.

The emesis consists sometimes in mere retching or in actual vomiting ; and these manifestations may reach a high degree and recur frequently without causing any real mischief. We are often amazed to see women, who throughout the whole course of their pregnancy, every time they have eaten anything, are attacked, sometimes earlier, sometimes later, with painful retching and vomiting, not only by day but by night, and yet not suffer much in their general health. In some cases the vomiting is preceded neither by pain nor feeling of pressure in the precordia ; in others the uneasiness in the gastric region is permanent, the mouth becomes dry, the skin hot, the pulse frequent, and emaciation follows. Not unfrequently derangements of the cerebral functions show themselves, sometimes in the form of hallucinations, sometimes of violent headache, and occasionally a comatose condition supervenes, which is in the highest degree dangerous to life.

In the earliest period of pregnancy vomiting is pretty frequent, and some women suffer from it immediately after conception ; whilst in many women no vomiting occurs during the whole course of pregnancy. If the vomiting sets in immediately after conception it may continue during the whole of pregnancy till delivery has actually taken place. Vomiting usually ceases on the expulsion of the child, and no longer annoys women who have been delivered. In some cases, though these are of rarer occurrence, the vomiting appears in the last three months of pregnancy, and may determine very unfortunate consequences. The vomiting which occurs during labour depends upon repletion of the stomach, a peculiar severity of the pains ; and though the manifestations it occasions are painful, they are not dangerous.

Very different causes have been assigned for this vomiting, often obstinate and incapable of being arrested ; thus Bretonneau ascribed it to a spasmodic rigidity of the womb which did not admit of the dilatation necessitated by the increasing volume of the fœtus ; Negrier thought it was the result of an inflammatory irritation of the cervix sympathetically affecting the stomach. Kiwisch sought the cause of the vomiting in an unusual susceptibility of the nerves of the stomach, and considered that it was in close connexion with the chlorotic condition of the blood which is frequent in pregnant women. Frerichs directed attention to the coincidence of vomiting with albuminuria and uræmia. Clay has referred to an inflammatory condition of the cervix and os uteri as the cause of vomiting ; while René Briau thinks it is due to retroversion of the uterus in the third month of pregnancy. Hohl succeeded in one case in discovering the cause of violent vomiting to be retroversion of the uterus at the fourth month of pregnancy.

The vomiting which appears late in pregnancy, especially during the ninth lunar month, is usually the result of the pressure which the uterus exerts on the liver or stomach, and it commonly disappears when the uterus sinks.

Virchow has directed attention to the circumstance that in pregnant women who endeavour to preserve a slender figure by the use of stays, the portion of the liver lying below the line of application of the pressure is compressed between it and the ascending uterus, so that the gall-bladder may be compressed, and by the tension of the bile ducts an intense jaundice be produced.

The vomiting of pregnant women may be associated with or mistaken for the most various diseases of the chylopoietic viscera, as with acute or chronic gastric catarrh, with a perforating gastric ulcer, carcinoma of the stomach, or paratyphlitis.

Acute gastric catarrh is distinguished from the vomiting of pregnancy by its longer duration, and the disinclination for food ; and chronic gastric catarrh is distinguished by the character of the matter vomited, which mostly contains clots of blood. Perforating ulcer of the stomach is characterized by its almost invariably slow development, by the gastric pain and bloody vomiting. Cancer of the stomach can only be diagnosed with certainty when a hard swelling connected with the stomach can be clearly made out, and

when it can be distinguished from swellings of neighbouring organs, accumulations of feces in the transverse colon, tumours of the liver or of the omentum. The circumscribed, irregular, moveable or immoveable tumour which cancer gives rise to is almost without exception painful on pressure and even without it, and frequently there dart from it burning lancinating pains which extend to the back. The vomiting which occurs spontaneously or after meals consists at first of watery or slimy matters; later in the disease it resembles coffee-grounds or chocolate, appearances which sufficiently distinguish it from the matters vomited by pregnant women. In perityphlitis there is a roundish, uniformly hard swelling, tender on pressure, which at first lies deep in the right iliac fossa; during inspiration and expiration the abdominal parietes move over it. If the cæcum is empty it is often necessary to press the abdominal wall deeply in, in order to recognise the swelling, and the percussion note is clear over it as the cæcum containing air lies in front of it. It is only in cases where the swelling reaches the anterior abdominal walls that a certain diagnosis is possible, and that this cause of obstinate vomiting can be recognised.

Difficult as it often is, in the case of those suffering from gastric symptoms, to determine whether these depend upon organic lesions, or are merely sympathetic phenomena, we are yet justified in ascribing them to the former, when they have existed for some time before the beginning of pregnancy; when the appearance of the tongue deviates considerably from its normal characters; when there is fixed pain, increased on pressure, in the precordia; when emaciation is progressive, or constant fever sets in. Even suppose we are so fortunate as to be able to make a certain diagnosis, little is often gained, as the treatment is only too often without result. Especially the sympathetic symptoms induced by pregnancy often present the most obstinate resistance and defy the resources of art. A cure not unfrequently takes place on the spontaneous occurrence of abortion; and cases have been published in which death of the fœtus without its simultaneous expulsion has been observed, and where symptoms which had previously resisted all treatment immediately disappeared. In some cases death has taken place in spite of the occurrence of abortion; Moreau has observed three cases with a fatal termination.

The treatment of the vomiting of pregnancy is not always crowned with satisfactory results, as indeed the long list of the most various remedies recommended sufficiently proves. The heightened sensitiveness of the stomach renders necessary easily digestible food, such as cold roast poultry, venison, and underdone beef. Good results are generally obtained from the use of seltzer and other aerated waters, and mild or even drastic purgatives; but the best effect is to be expected from bitter, tonic, antispasmodic remedies. Among these may be mentioned calamus, tincture of ipecacuanha, orange flower water, and assafoetida. Among drinks may be mentioned good old wines, champagne and coffee. Less favourable results are to be expected from opium, morphia, and castoreum. Hohl recommends, when the vomiting depends upon increased secre-

tion of bile, and this is not occasioned by pressure on the liver, the use of bicarbonate of soda and tincture of *nux vomica*. Where there is inflammatory irritation of the cervix, Negrier thinks good is done by the application of leeches to the vaginal portion; and Bretonneau endeavoured to overcome spasmodic rigidity of the uterus by the application of belladonna ointment. Moriceau thought benefit was derived from the application of a large derivatory to the region of the stomach. Simpson speedily cured a severe case by inhalation of opium. Krause recommends that some lukewarm gruel or very weak green tea should be always kept in readiness, and that some cups of it should be taken quickly in order to provide material for the speedy evacuation of the stomach; he also found creosote combined with steel act very efficaciously.

Ferrand had a satisfactory result in a case of obstinate vomiting, where he employed moxas, and in another where he applied Vienna paste; in the second case, however, chloroform and iodine were also employed. In cases of the kind under consideration, Corvisart, Baudot, Gentles, and others recommend pepsine. They give ten grains of it once a day, or a teaspoonful of the liquor pepticus thrice daily, immediately before meals. Hensch recommends, when vomiting during pregnancy is very obstinate, the use of creosote. In three cases, where other means had proved useless, he obtained a cure by means of it; in one case the vomiting ceased after the first dose, in another it was not checked for a month.

From the fear that from the continual vomiting a fatal result might occur, it has been proposed that abortion or premature labour should be artificially induced. Opinions are not unanimous as to the propriety of this proceeding. Cazeaux is opposed to it, because no special time can be fixed when the abortion should be brought about. Villeneuve is in favour of the induction of abortion when the life of the mother or child is seriously endangered. Busch considers abortion admissible in none but extreme cases. Hohl objects to the induction of abortion, because the most severe cases of vomiting very seldom end fatally. Churchill and Lee have by this means obtained very satisfactory results. C. Braun trusts to the expectant method, and recommends abortion only in cases where the life of the mother is seriously endangered.

In the few cases where vomiting depends upon retroversion of the pregnant uterus, it may, though having previously resisted all treatment, be speedily and permanently cured by replacing the womb in its normal position. This is proved by one of M. Braun's cases, where obstinate vomiting accompanied antifixion of the pregnant uterus. The observation is so much the more interesting as no case similar to it has been published. The subject was a woman, twenty-two years of age, of healthy parents, who had menstruated for the first time in her sixteenth year, and in whom menstruation had always observed the normal type. In December, 1862, menstruation ceased, and during this month the patient was in the enjoyment of perfect health. On January 1st, 1863, vomiting occurred, which ceased on the following day, but returned a few days afterwards; until, finally, on March 13th, it was so violent that she was

induced to apply for medical advice. On her admission the patient was found to be of the middle height, her osseous system was slender, and her muscular development proportional. The body was emaciated, the surface of a yellowish white colour. The breasts, over which the skin was moderately stretched, were firm; the nipples irregular and surrounded by an olive-coloured areola. There were no head symptoms; the thorax was long, of moderate breadth, and well arched; inspiration and expiration were natural. The sounds on auscultation and percussion of the chest were normal; on palpation the lower part of the belly was found distended, and above the symphysis pubis an indeterminately limited tumour was recognised, which could not be closely examined in consequence of the tension of the abdominal walls, but over which percussion was dull. On vaginal examination the opening of the vagina was found moderately wide, the temperature of the canal was higher than natural, and the secretion from its mucous membrane increased. Through the anterior vaginal wall pressed a round firm tumour, which was moveable with difficulty, and behind was continued in the vaginal portion, bent at an angle and directed towards the point of the coccyx. There was constipation, and the patient vomited ten or fifteen times daily, especially when fasting, a greenish mucus in no great quantity; there was no nausea, and the matter was discharged suddenly, as if by eructations. The pulse was normal; the patient only complained of occasional dizziness which lasted for one or two minutes, and which came on when she sat up in bed.

An absence of the other symptoms which accompany those diseases of which vomiting is a symptom, such as acute or chronic gastric catarrh, perforating ulcer, carcinoma of the stomach, paratyphlitis, rendered the diagnosis easy, and the vomiting was accordingly referred to the flexed condition of the pregnant uterus.

Although it was probable, but not certain, that there was an absence of adhesions of the fundus to the posterior wall of the bladder, the prognosis was only doubtful, as when the uterus is replaced it too often again falls over; the prognosis regarding the cessation of the vomiting was dependent upon the greater or less facility of the reposition of the flexed uterus and its retention in its normal situation.

The author therefore determined to endeavour to replace the flexed uterus. With this view the urinary bladder was emptied by means of an elastic catheter, and the rectum was cleared out; and as the patient's susceptibility was very inconsiderable, he decided to attempt the replacement of the organ without the help of chloroform. Two pillows were now introduced below the sacrum so as to elevate the pelvic region. The index and middle fingers of the left hand were introduced into the vagina, and pressure was made forwards and upwards. The fundus of the uterus immediately passed upwards and could be clearly felt through the abdominal parietes. In order to prevent the uterus from falling backward the patient was directed to lie upon her face, a position which kept pretty continuously for several days. The result

satisfactory. The vomiting, which had occurred six times in the morning of the day when the replacement of the uterus was effected, at once ceased. The patient stated that she experienced instantaneous relief when the replacement of the uterus was effected, and under a nourishing diet she made a rapid and perfect recovery.

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ART. 131.—*On the Influence of the Relative Ages of the Parents on the Sex of the Child.*

By Professor BRESLAU, of Zurich.

(*Gaz. Hebd. de Méd. et Chir.*, Novembre 13, 1863.)

This interesting question has not been settled yet, in spite of the researches of Hofacker, Sadler, Gockler, Boulanger, and Boudin. In a recent communication to the Academy of Sciences of Paris the last of these observers stated as the result of his researches that the male sex preponderates when the father is older than the mother, and *vice versa*; whilst there is a tendency to an equal distribution of the two sexes, with, however, a slight excess in favour of females, when both parents are of the same age. Nearly similar conclusions had also been adopted by the other authors abovenamed.

An examination of the birth-registries in the canton of Zurich for the years 1861 and 1862, has led Prof. Breslau however to entirely different conclusions. Thus, during those two years, 16,492 births were registered, of which 8561 were male, and 7931 female, or as 1079:1000.

Of 11,762 children whose fathers were older than the mothers 6069 were boys and 5693 girls, or as 1066:1000.

When the mother was older than the father, of 3529 births 1869 were male and 1660 female, or as 1125:1000.

Lastly, of 1201 children born of parents of the same age 623 were boys and 598 girls, or as 1125:1000.

Prof. Breslau, therefore, concludes that there is no constant ætiological relation between the relative ages of the parents and the sex of the child.

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ART. 132.—*On the Physiological Characters of Menstruation in Disease.*

By Dr. GUBLER, Physician to the Beaujon Hôpital.

(*Journal of Practical Medicine and Surgery*; and *Medical Circular*, January 20, 1864.)

Dr. Gubler, of Beaujon Hôpital, demonstrates in a recent publication, that the oozing of blood, which, in many women, occurs shortly after menstruation in the incipient stage of acute febrile or toxic disease, is entirely unconnected with the true catamenia, and the periodic escape of an ovule.

The discharge is constituted by simple sanguineous exudation; as the extremely short interval which has elapsed since the last catamenial period would tend to show. In one case, for instance, M. Gubler observed, one week after the occurrence of the menses in a young woman, aged twenty-three years, simultaneous nasal and uterine hæmorrhage, both extremely slight, and coinciding with the first symptoms of typhoid. Now, it is scarcely presumable that in so short a period an ovule could possibly have reached maturity, and indeed congestion and a sanguineous discharge from the womb, when we recollect that the ovulum and the enveloping Graafian vesicle require no less than a period of twenty-eight or thirty days to attain their full development.

It is, moreover, an acknowledged fact that these discharges, assumed to be menstrual, occur under circumstances entirely incompatible with ovulation. M. Gendrin, in his *Médecine Pratique*, mentions a family in which three successive generations of girls were affected with irregular uterine hæmorrhage between the ages of six and eight; one of the children, who did not present this symptom, was liable to frequent bleeding at the nose, which persistently recurred up to the age of sixteen, when the catamenial function became established.

The same peculiarity is observed in women who have reached the age at which menstruation ceases. M. Gubler has noted sanguineous exudations of this description in women of seventy and eighty.

Another circumstance may be adduced in proof that the discharge of blood from the womb is not necessarily connected with ovulation: some women who have never menstruated, in the usual sense of the term, have nevertheless borne children, and present on the surface of the ovaria distinct indications of ovulation. Last year a girl, aged twenty-three, who had never menstruated, died at Hôpital Beaujon; M. Gubler performed the autopsy, and found eleven cicatrices on the left, and six on the right ovary, in every respect similar to those observed in women whose catamenial functions are perfectly regular.

M. Gubler also relates the case of a woman, aged twenty-six, who was admitted into Hôpital Beaujon for typhoid fever; sanguineous exudation from the womb took place in the early stage of the disease, and after her death, which occurred on the eighth day, the ovaries were carefully inspected, and no signs whatever of recent ovulation were detected on the surface of these organs. This was, therefore, an instance of what the author denominates uterine epistaxis.

The knowledge of this form of epistaxis rectifies the views hitherto entertained as to the reciprocal influence of the menses on the progress of the acute disease. Our predecessors doubtless exaggerated the unfavourable action of fevers and inflammatory affections on the catamenial functions, but we would fall into an equally obvious error were we to consider these morbid conditions as an invariable cause of the premature return of the menses. The error originates

in a confusion between mere uterine exudation and genuine menstruation.

"Acute disease," says M. Gubler, "may either suppress or accelerate the menses, or exercise no influence whatever on the performance of the function. According to all appearance, the period is seldom hastened by more than one week. Acute affections may, on the contrary, induce uterine epistaxis as soon as eight days after the last menstruation, and at any time before the recurrence of the next period. It is chiefly in the premonitory stage of fevers that the circumstance alluded to arises, but it may coincide with other dates of the evolution of pyrexia. The amount of the exudation and its frequency are dependent on the gravity of the case, the tendency of congestion of the hypogastric viscera, the softening of the tissues, and the presence of the hæmorrhagic diathesis, consequent on a morbid condition of the blood. Uterine epistaxis is, for these reasons, more commonly met with in the incipient stage of thoracic and abdominal inflammation, of typhoid, erysipelas, or febrile eruptions, and especially in the prototypes of the class measles, scarlatina, and small-pox.

On the treatment it is unnecessary to dwell; medical interference being required in cases of copious hæmorrhage only. But the practitioner must in future be aware that he is not bound to remain inactive, as in the case of genuine menstruation.

ART. 133.—*On the Passage of Foreign Matter from the Mother to the Young through the Milk.*

By M. FLOURENS.

(*Canstatt's Jahresbericht*; and *Glasgow Medical Journal*, Jan. 1864.)

The fact having been previously noticed by M. Flourens that the bones of the foetus became coloured red when the mother has been fed upon red colouring matter, he extended his observations still further, and has found that the bones of the young offspring become red-tinted when, during the period of nursing, its mother feeds upon reddened food. The experiment succeeded perfectly in young suckling pigs, of which the bones became red in from fourteen to twenty days. Since, however, the pigs might have eaten some of the reddened food of the mother, M. Flourens selected another class of animals for experiment, in which this source of error could not exist—viz., albino rats and rabbits. In the albino rat, the skeleton became red in eleven days; in the albino rabbit, the same phenomenon occurred in nine days; though not a trace of reddened matter had been eaten by the young since they had lived wholly upon the milk of their mothers.



ART. 134.—*Are the Long Forceps necessary in Obstetric Practice?*

By Dr. J. THOMPSON, of Kilmarnock.

(*Glasgow Medical Journal*, April, 1864.)

The following remarks are taken from a statistical report of 5000 cases of midwifery.

In a former report, to which the present report is the sequel, Dr. Thompson said:—"In the whole course of my practice, which now extends over a period of more than twenty years, I have never either had occasion to employ the long forceps, or seen a case in which I could suppose their use was at all desirable. I think it may therefore not unfairly be presumed that the long forceps will ere long be numbered among the things that were."

In this present report Dr. Thompson says:—"A few months after the publication of this report this statement seems to have been considered of so much importance as to call forth some remarks upon it in a public class-room in the city of Glasgow, where I understand it was attempted to be set aside, more by ridicule than by argument. This I heard of at the time, but did not feel disposed to take any further notice of the subject until a longer and more extended experience had either confirmed it as a fact or exposed it as a fallacy. Since that period I have attended 1700 additional cases, which make a total of 5000, in which I have carefully registered every circumstance of any importance. But perhaps I may be allowed to state, that from the commencement of practice I have attended six thousand cases, and used the forceps one hundred and thirty times. In the whole of these cases the short forceps alone were employed, and with the exception of two cases, to which I shall afterwards have occasion to refer, were used not only with facility but with perfect success. If the long forceps are really required as often as is usually set forth in those works that treat of this subject, it seems at least a little strange that not a single instance of the kind has occurred to me in the course of more than thirty years' experience, and in a practice as large as falls to the lot of most men. This will appear not less wonderful when I state, that I have met with almost every other case of conceivable difficulty, rare as some of these undoubtedly are, and yet I have never met with what is universally stated and believed to be a very common occurrence—namely, a case in which the use of the long forceps has been found to be indispensably necessary. I am perfectly ready to admit, that many things may have occurred in the practice of others that have never once happened to myself, and that it fairly comes within the domains of an ordinary possibility that the long forceps may have been required; but what I insist on is this, that if they are really necessary as often as some authors would have us to believe, is there not something more than a possibility, is there not a probability, that out of six thousand cases I must surely have met with a single and a solitary instance in which I could not have succeeded in

effecting delivery without the assistance of the long forceps? But up to this hour no such case has yet presented itself; the short forceps have thoroughly and successfully answered every purpose. If I had been possessed of a pair of long forceps it is very likely that some time or other I might have been induced to try them, and of course failed to perceive the fact which I am now endeavouring to establish; but never having felt the slightest necessity for them, I have not as yet thought proper to make such an investment. It is quite true that I have met with a case in which there was a difficulty in using the short forceps; but the same difficulty would have been equally great with the use of the long. This was a case in which there was an adipose tumour growing from the posterior wall of the vagina, about the size of an orange, and of course obstructing the passage. Here the head of the child was long detained above the brim of the pelvis, and where the use of any kind of forceps held out but little hope of immediate relief. Still in this apparently very unfavourable case I succeeded in delivering with the short ones. \* \* \* \*

"I have used the short forceps one hundred and thirty times with comparative ease and facility, and with almost universal success. In four cases I failed with the short forceps, but in none of these was the success any greater with the long ones. In every case where I have seen the long forceps employed, I was able quite as readily and effectually to apply the short ones. If such, then, is the brief and eventful history of the long forceps in the long catalogue of six thousand cases, I am forced to the conclusion, that in so far at least as my personal experience is concerned, they have been entirely superfluous and unnecessary, and may without injury to the cause of practical obstetrics be obliterated from the list of obstetrical instruments."

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ART. 135.—*On the Operation of Transfusion in Obstetric Practice, with the Description of a more Convenient Transfusion Apparatus.*

By Dr. GRAILY HEWITT, Physician to the British Lying-in Hospital, &c.

(*British Medical Journal*, August 29, 1864.)

The circumstances which lie in the way of a more general adoption of transfusion are the following:—

1. A disbelief in the efficacy of the operation, and the feeling which prevails with some that the transfusion may fail to do good.
2. Admitting the utility of the operation, the difficulty of deciding in particular cases as to the time for its performance; in other words, the indications for the operation.
3. The difficulty of performing the operation, which is dependent on—
  - a. Want of means speedily and immediately accessible for performing the operation with the necessary degree of nicety.

b. Want of previous study of the steps and details of the operation.

The chief obstacle in the extension of the operation is, Dr. Hewitt shows, the difficulty connected with the performance of the operation itself, and we extract what is said upon this subject, and recommend it to the careful perusal of our readers. The paper was read at the last annual meeting of the British Medical Association, and the apparatus referred to in the text was exhibited at the same time.

"A careful consideration of the nature of the emergencies in which the operation is likely to be called for, together with a due estimation of the practical difficulties surrounding it, necessitates the conclusion that, if the operation is to be performed under advantageous circumstances, we must always be prepared to undertake it at a few minutes' notice; and this necessitates the being provided with an apparatus portable, simple, and easily cleaned. Two years ago I procured the apparatus of Professor Martin, of Berlin, consisting of a small glass syringe, a canula, and trocar. In the case above related I used this instrument; but the nozzle of the glass syringe broke in the canula, and it became useless. The simplicity of the apparatus commended it to my notice, but it does not fulfil the requirements of the case. The various forms of apparatus sold in this country are open to the objection that they are too unwieldy to be carried about, and are, therefore, not likely to be within reach at the time they are wanted. Dr. Hamilton, of Edinburgh, lately proposed a very simple and portable apparatus, consisting of a small funnel with an elastic tube and a canula, the blood being thrown in by the force of gravitation alone. This apparatus is objectionable, however, for the following reasons:—The blood is kept exposed to the air for too long a time; its use necessitates the close juxtaposition of the individual supplying the blood and the patient; choking of the tube, which is a long elastic one, with coagula, is likely to happen; and, from what has been stated as to the amount of force which was in one case of transfusion necessary to propel the blood inwards, it appears that a breakdown might be expected with the instrument in question.

"Before describing the apparatus which I have devised, and which is now submitted for the inspection of the meeting, it will be advisable to consider for a moment what are the principles which should guide us in the performance of the operation.

"First, as to the blood to be used. Should pure blood or whipped blood be used? To this question, as it appears to me, there can be but one answer, viz., that pure blood should be used. The use of whipped blood has only this in its favour, that the injection of the fluid is not liable to interruption from coagulation. But the objections to it are numerous and weighty: First, the delay involved in the preparation. Secondly, the probability that blood deprived of fibrine is less likely to act beneficially as a restorative. The blood remaining in the body after a severe hæmorrhage has been found by analysis to contain a greatly reduced quantity of crassamentum; and it is reasonable to infer, therefore, that a supply of what the

blood is chiefly deficient in—viz., fibrine and blood-corpuscles—is most essential. Thirdly, it has been found by Dr. Brown-Séquard, that the introduction of defibrinated blood has, in animals experimented on, induced sudden coagulation of the blood and death. Lastly, it is to be recollected that, in all the successful cases of transfusion in obstetric practice, pure blood has been always used. It being decided that pure blood should be used, the next question to be determined is how best to prevent the occurrence of coagulation while the operation is in progress. This has been a great difficulty; and many attempts to transfuse blood have been frustrated by this coagulation, and by its interference with the operation.

“The experiments and observations of Scudamore, Hewson, Carpenter, and Babington, confirmed by the more recent inquiries of Dr. Richardson, go to show that, while differences in the rapidity of coagulation are observed in different cases, yet coagulation is delayed by non-exposure of the blood to the contact of air; and that cooling of the blood a few degrees below the normal temperature does not facilitate coagulation, as it was formerly supposed to do. It is affirmed by Nasse that woman's blood coagulates two minutes sooner than man's blood. The inferences to be drawn from these and other physiological considerations are—1. That, in the operation of transfusion, the blood of a man is better than the blood of a woman, while it has the further advantage of containing a larger proportion of those constituents of which the patient requires most; 2. That the use of warm water, and of a complicated apparatus to preserve the blood warm during the operation, is unnecessary; 3. That a fundamental requisite for the operation is a means of preventing, as far as possible, exposure of the blood to the air; and 4. Seeing that the time during which the blood remains fluid after being drawn does not, under such tolerably favourable circumstances as may be expected in operating, exceed three or four minutes, while it may be less, it is evident that the various steps of the operation should be performed rapidly and without delay.

“The apparatus now exhibited was constructed for me by Messrs. Savigny and Co.; and I have had placed together, in a compact and portable case, the whole of the appliances required for the operation. The blood is to be received into the barrel of the syringe, which is of glass, and holds two ounces; and when full the piston is inserted, and the blood is ready for injection. This plan of having the piston removable from the syringe, and of receiving the blood into the syringe direct, is, I am convinced, the best; and the adaptation of this principle in the instrument now exhibited appears to me to be a convenient and useful one.

“With reference to the steps of the actual operation, and the precautions necessary to be observed, they are sufficiently indicated in the following list of directions. These directions have been drawn up after a very careful study of the operation, and the rules laid down are devised to obviate in the best manner practical difficulties which have to be encountered in the performance of the operation. It is absolutely necessary that every part of the opera-

tion should be weighed and considered, and each step of it made to succeed the other accurately and quickly; and, although there is no great difficulty in the operation, it is undoubtedly one of some nicety.

"The transfusion apparatus now exhibited is so constructed that every part of it is easily cleaned and put together. Its bulk is small; it is extremely portable; and by its aid the operation of transfusion may, I believe, be performed rapidly, easily, and satisfactorily.

**"DIRECTIONS FOR THE PERFORMANCE OF THE OPERATION OF TRANSFUSION.**

*"Requirements for the Operation.*—1. An individual to supply the blood. 2. An assistant to hold the arm of the recipient steady. Also a second assistant, to manage the arm of the individual supplying the blood. The second assistant may possibly in some cases be dispensed with. 3. The transfusion-case, containing a syringe, two canulas, with plugs, scalpel, forceps, and lancet. There will be also required a basin, warm water, and a handkerchief to bind the arm in the operation of venesection.

*"Directions for the Performance of the Operation.*—1. Arrange all the steps of the operation from first to last. The operation should not be commenced until every detail has been thoroughly considered, and provision made for the different steps to succeed each other rapidly.

"2. See that all parts of the apparatus are in order. The syringe to be worked with a little warm water. The piston then to be taken out; and the whole apparatus, together with the canulas, placed in a basin of clean warm water ready for use.

"3. Select a vein in the arm of the patient, either the median basilic, the median cephalic, or the cephalic vein; make an incision one inch and a half long, which will freely expose one inch of the vein. For a more limited space—*e. g.*, a quarter of an inch—the whole circumference of the vein should be exposed; so that, if considered necessary, a probe or a piece of thread may be passed beneath it.

"4. Make a puncture with the scalpel at the middle of the exposed part of the vein, large enough to allow the canula to be inserted. Insert one canula, and withdraw the plug, taking care that the cannula is actually in the vein. (This first canula is not to be used for the passage of the blood.)

"5. The arm so operated upon is next to be given into the charge of an assistant, with instructions to prevent the escape of the canula from the vein.

"6. The next step is to obtain the supply of blood. Before doing so, however, instructions to be given to the second assistant as to what is to be done *after* the first supply is obtained, otherwise time will be lost in a subsequent stage of the operation. The vein to be opened by a large incision, so that a full stream of blood may be obtained. The glass syringe (without the piston, and with the small stopper of the escape-pipe removed) is to be held close against

the arm, *horizontally*; the opening of the escape-pipe directed upwards to prevent blood flowing away. When about five-sixths full, the stopper of the escape-pipe to be inserted, the syringe to be held vertically, and the piston inserted.

"7. Without a moment's delay, take the reserve canula from the basin of warm water and insert it in the vein of the patient, in the place of the first canula. This substitution must be effected rapidly. Then remove the plug from the escape-pipe, and connect the syringe, ready filled with blood, with the canula in the vein.

"8. Inject the blood, keeping the syringe in a nearly perpendicular position. The injection should be made slowly; quite a minute should be employed in throwing in the contents of the syringe. If the canula become blocked, withdraw it, and insert the other, freshly dipped in warm water and cleaned.

"9. If more blood be required, leave the canula in the vein while the same process is gone over again. (See Direction No. 1.)

"10. It is very essential to take precautions for preventing *delay* in the different steps of the operation. Delays usually involve loss of blood, the blood becoming coagulated and unfit for injection. The fainting of the individual giving the blood has frequently prevented a second supply from being obtained; and the loss of the first supply is, therefore, by all means to be avoided, if possible. Not more than one minute, at the most, should elapse between the filling of the syringe and the commencement of the actual injection. The water used to be about 95° or 100° Fahr.

"It may be asked, *What is the quantity of blood necessary to be injected?* In half of the successful cases of transfusion, the quantity required has not exceeded four ounces (in the last successful case only two ounces were required), although occasionally the quantity required is much greater—viz., eight, ten, twelve, and as much as twenty-four ounces. The difficulty of obtaining a second or a third supply of blood from the same source necessitates occasionally the recourse to a second or even a third individual. It is necessary also to remark, that care is required in holding the arm to prevent the canula from slipping out; for this involves delay, and possibly consequent spoiling of the contents of the syringe. Like care is necessary with the arm of the individual supplying the blood to avoid unnecessary loss of blood—a loss which might prove subsequently irreparable.

"The present position of the operation of transfusion as a remedy for the effects of flooding in obstetric practice, appears to be this: that while the operation has proved successful in many instances, this fact is only now beginning to become known and disseminated amongst the profession. The next step which appears necessary to be taken is to utilize the operation, and afford facilities for its more general and more frequent performance. I am not without the hope that the observations I have made will have the effect both of directing more general attention to the subject of transfusion in obstetric practice, and of facilitating the application of the operation itself. I have remarked on the necessity for careful study of the operation, and of its various steps; and to this I cannot but attach

the greatest importance. The time during which life remains after transfusion has become applicable is generally so short that if the operation be not undertaken at once it cannot be undertaken at all. Previous to the arrival of this stage of the case, time and attention are occupied incessantly in applying other measures—in making the patient swallow stimulants, or in arresting the hæmorrhage; and surrounded as we are by the distracted friends who are momentarily expecting to see the patient draw her last breath, we are certainly not in the best circumstances for planning and carrying into effect an operation requiring care, nicety, and deliberate calculation to render it successful.

“In order that the operation may be really useful, and as applicable as any other therapeutic means, it must be made easy; and this can only be done by previously studying and reflecting on the operation in its minutest detail, and by providing means for rapidly and easily performing it. Whether the particular plan I have recommended for performing the operation be considered the best, is a matter on which diversity of opinion may naturally be expected; and I shall be glad to avail myself of any suggestions which the reading of this paper may call forth, in order to perfect both the apparatus and the operation.

“A fear has been expressed by some authorities that ‘if transfusion becomes a common practice it will often be employed unnecessarily.’ The possible abuse of an operation is not, however, to be urged with any show of reason against its use; such an argument can only apply on the supposition that those who practise medicine are helplessly ignorant and destitute of discrimination. It is very certain that an earnest direction of attention to the peculiarities and necessities of cases of severe flooding, and a proper recognition of the place which should be occupied by transfusion as a remedy, will result in giving such a degree of precision to practice in such emergencies as to prevent unnecessary performance of the operation. To use the words of Mr. Soden, ‘the stronger his confidence in the power of transfusion, with so much the greater patience and confidence would the medical attendant first avail himself of the more simple resources his experience suggested.’” (*Med.-Chir. Trans.*, vol. xxxv. p. 432.)

#### ART. 136.—*On Combined External and Internal Version.*

By Dr. BRAXTON HICKS, Assistant-Physician to  
Guy's Hospital.

(*Lancet*, November 21, 1864.)

Dr. Hicks read a paper on his mode of turning, which might be called “bimanual version,” before the Obstetrical Society, and brought forward twenty cases in which he had operated, including eight cases of placenta prævia, one of accidental hæmorrhage, and two in which he had changed arm presentations into cephalic, in both of which the children were alive. After alluding to the

discovery of the mobility of the *fœtus* made by the Germans, and also to the plan of pushing on the child by one or two fingers through the os, he proceeded to show the mode of combining both movements, by acting on both extremities of the child, with a much greater certainty as to the result in the majority of cases requiring version. He pointed out the principles on which the plan was based—viz., the mobility of the child in utero, varying according to the activity of the uterus; the position of a knee within a short distance of the os, when the child was transverse; the ease with which the breech was brought to the os with the foot upon it, when the child was already transverse. The movement of the child in utero was accomplished by pressing on one side of the breech at the fundus, in ordinary head presentations, by a series of gentle palpations; or by a gliding pressure on the abdominal parietes, so as to follow up the *fœtus* as it recedes under the impulse, by continuing of which the breech is brought to the middle of the uterus on one side; at the same time, the head is pushed up by a finger or two through the os, so as to raise it above the brim to the middle of the uterus on the other side. The child being thus more or less transverse, the knee can be generally easily seized; if not, the breech must be depressed to the os, and the foot secured. Dr. Hicks dwelt upon its easy application to placenta prævia, as shown in the cases he recorded; and stated that it was particularly of use in those cases where the os was so little dilated that the hand could not enter. He, however, laid great stress upon the importance of not using any more traction than the weight of the arm could produce, whereby the child was used as a plug, while time was given to rally the patient, for the os to dilate, and for the pains to come on. In almost every case he waited for natural efforts to deliver, only gently assisting. He had in none seen the slightest bleeding, internal or external, after the leg was once fairly through. Dr. Hicks then pointed out the mode of producing cephalic version, which he had found very practicable in certain cases of transverse presentation, by placing the head, already secured between the outside and inside hand, into the os, and retaining the external hand on the head till the uterus had moulded itself to the form of the head and shoulders. He also showed that this mode of pressing the head into the os was a means of restoring prolapse of the funis in some cases, as occurred in two cases recorded by him, and thought it would in similar cases be found to be a satisfactory mode of treatment. Allusion was then made to the advantages of early version, and to the class of cases to which it was applicable. The circumstances that arose to interfere with the plan were pointed out, and the means of combating them. The author remarked, that although in confirmed arm presentations it was scarcely possible to expect this plan to succeed, yet these cases need seldom occur to a vigilant practitioner, as he had the means of avoiding such cases, if called early, by bimanual version. Perhaps the greatest value of this mode is the capability of version long before it can be performed by any other method.

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**ART. 137.—*On a Plan of Treating Prolapse of the Funis, first suggested and carried out by Sir Richard Croft.***

By Dr. J. LUMLEY EARLE, Obstetric Surgeon to the Queen's Hospital, Birmingham.

(*Medical Times and Gazette*, December 19, 1863.)

"Of all the plans recommended for the treatment of prolapsus funis," writes Dr. Earle, "it is said that of turning has saved the greatest number of children, and I shall therefore presently compare together the respective merits of turning, and Sir Richard Croft's method, to show how far more likely is his plan to lessen the number of still-births in such cases than is the operation of turning; but, before doing so, it would not be right to leave unmentioned the objections attached to other modes of treating prolapsus funis.

"To such methods as pushing the cord above the brim with the fingers, or with instruments, or lodging the cord in the hollow of the neck of the child, there is the objection that the cord, which, when prolapsed, is generally unusually long, is very liable to slip down again at the next uterine contraction. To mechanical means for pushing the cord above the brim, besides the objection already mentioned, there are two others; one is that a medical man cannot be expected to carry about to every labour an instrument intended to remedy an accident which only occurs about once in 221 cases. The whalebone instrument recommended by Dr. Ramsbotham can certainly be made on the spot; but then it has the other objection attached to it, which is, that in order to place a fold of the cord in the loop of the tape, the cord has to be pulled down outside the vulva; this proceeding alone would place the life of the child in a certain amount of jeopardy; and further, by pulling down more of the cord, there would be less chance of its remaining up after being replaced. The plan suggested of placing the cord in a part of the pelvis where it would be the least subject to pressure is all very well in theory, but I should be very sorry to trust to it in practice. It might in some cases succeed where the pelvis was unusually capacious, and the birth premature. The forceps would only be required in those cases where the head was low down in the pelvis, or, at all events, had entered the brim, and of necessity, if the prolapsus has not been remedied, before the head has come down so low the life of the child would be in the greatest of danger, if not lost already.

"The operation of turning for prolapsus of the cord (if we only consider it for a moment) is a most unscientific mode of treating that complication. In order to save the child's life we undertake a treatment which of itself is but a few degrees less dangerous to the infant. According to Dr. Churchill's statistical tables, the mortality in footling cases is 1 in 24. On the other hand, Sir R. Croft's method does not alter the natural head presentation, which is the only safe one to the child, but merely replaces the cord in its proper position. His method consists in passing the cord up to the fundus

of the uterus enclosed in the hand, and hooking it over the highest portion of the fœtus. In his treatment we do the first step towards turning, that is to say, we pass our hand up to the fundus, but instead of pulling the feet down, we merely hook or place the cord over the highest portion of the fœtus, and then, when an uterine contraction comes on, gradually withdraw our hand. What mode of treating such cases can be more according to nature?

"Dr. Churchill, in speaking of this plan, states that it is a very difficult and somewhat dangerous operation, and that he is inclined to agree with Dr. Burns, that, 'if the hand is to be introduced so far, it is better at once to turn the child.' All I can say is, that in the three cases in which I employed this method, I found it a very simple operation, and as to its being better to go on and turn the child when the hand has been passed so far, I have stated the very important reason why it would not be better to resort to turning, as it is in itself a remedy of great danger to the child.

"Of course, Sir R. Croft's method would not be practicable in every case more than any one of the other remedies recommended; but in any case in which we could turn we could also employ his plan of treatment. The great point in prolapsus funis is not to rupture the membranes, if possible, until the os is nearly fully dilated, and not to leave the room after the prolapse is discovered, for in our absence the membranes might rupture, and the opportunity for applying proper treatment be entirely lost.

"I here subjoin a table of seven cases of prolapsed cord which have come under my own observation, with the methods employed, and the result to the infants.

Methods of Treatment.	Number of Cases.	Result to Child.	
		Alive.	Dead.
Pushed the cord above the brim . . . .	2	1	1
Turned . . . . .	2	1	1
Took the cord up to the fundus of the uterus, and hooked it over the highest portion of the fœtus . . . . .	3	3	—

"In the last of the three cases treated by Croft's method I subsequently delivered the woman (a primipara) by the low forceps operation, as the head had been in the cavity of the pelvis for some hours, and, notwithstanding the double danger to which the child had been exposed from the prolapsus funis in the first, and the forceps in the second stage, it was born alive. I may mention, although it is hardly necessary to do so, that in all the cases the mothers did well."

ART. 134.—*Are the Long Forceps necessary in Obstetric Practice?*

By Dr. J. THOMPSON, of Kilmarnock.

(*Glasgow Medical Journal*, April, 1864.)

The following remarks are taken from a statistical report of 5000 cases of midwifery.

In a former report, to which the present report is the sequel, Dr. Thompson said:—"In the whole course of my practice, which now extends over a period of more than twenty years, I have never either had occasion to employ the long forceps, or seen a case in which I could suppose their use was at all desirable. I think it may therefore not unfairly be presumed that the long forceps will ere long be numbered among the things that were."

In this present report Dr. Thompson says:—"A few months after the publication of this report this statement seems to have been considered of so much importance as to call forth some remarks upon it in a public class-room in the city of Glasgow, where I understand it was attempted to be set aside, more by ridicule than by argument. This I heard of at the time, but did not feel disposed to take any further notice of the subject until a longer and more extended experience had either confirmed it as a fact or exposed it as a fallacy. Since that period I have attended 1700 additional cases, which make a total of 5000, in which I have carefully registered every circumstance of any importance. But perhaps I may be allowed to state, that from the commencement of practice I have attended six thousand cases, and used the forceps one hundred and thirty times. In the whole of these cases the short forceps alone were employed, and with the exception of two cases, to which I shall afterwards have occasion to refer, were used not only with facility but with perfect success. If the long forceps are really required as often as is usually set forth in those works that treat of this subject, it seems at least a little strange that not a single instance of the kind has occurred to me in the course of more than thirty years' experience, and in a practice as large as falls to the lot of most men. This will appear not less wonderful when I state, that I have met with almost every other case of conceivable difficulty, rare as some of these undoubtedly are, and yet I have never met with what is universally stated and believed to be a very common occurrence—namely, a case in which the use of the long forceps has been found to be indispensably necessary. I am perfectly ready to admit, that many things may have occurred in the practice of others that have never once happened to myself, and that it fairly comes within the domains of an ordinary possibility that the long forceps may have been required; but what I insist on is this, that if they are really necessary as often as some authors would have us to believe, is there not something more than a possibility, is there not a probability, that out of six thousand cases I must surely have met with a single and a solitary instance in which I could not have succeeded in

effecting delivery without the assistance of the long forceps? But up to this hour no such case has yet presented itself; the short forceps have thoroughly and successfully answered every purpose. If I had been possessed of a pair of long forceps it is very likely that some time or other I might have been induced to try them, and of course failed to perceive the fact which I am now endeavouring to establish; but never having felt the slightest necessity for them, I have not as yet thought proper to make such an investment. It is quite true that I have met with a case in which there was a difficulty in using the short forceps; but the same difficulty would have been equally great with the use of the long. This was a case in which there was an adipose tumour growing from the posterior wall of the vagina, about the size of an orange, and of course obstructing the passage. Here the head of the child was long detained above the brim of the pelvis, and where the use of any kind of forceps held out but little hope of immediate relief. Still in this apparently very unfavourable case I succeeded in delivering with the short ones. \* \* \* \*

"I have used the short forceps one hundred and thirty times with comparative ease and facility, and with almost universal success. In four cases I failed with the short forceps, but in none of these was the success any greater with the long ones. In every case where I have seen the long forceps employed, I was able quite as readily and effectually to apply the short ones. If such, then, is the brief and eventful history of the long forceps in the long catalogue of six thousand cases, I am forced to the conclusion, that in so far at least as my personal experience is concerned, they have been entirely superfluous and unnecessary, and may without injury to the cause of practical obstetrics be obliterated from the list of obstetrical instruments."

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**ART. 135.—On the Operation of Transfusion in Obstetric Practice, with the Description of a more Convenient Transfusion Apparatus.**

By Dr. GRAILY HEWITT, Physician to the British Lying-in Hospital, &c.

(*British Medical Journal*, August 29, 1864.)

The circumstances which lie in the way of a more general adoption of transfusion are the following:—

1. A disbelief in the efficacy of the operation, and the feeling which prevails with some that the transfusion may fail to do good.
2. Admitting the utility of the operation, the difficulty of deciding in particular cases as to the time for its performance; in other words, the indications for the operation.
3. The difficulty of performing the operation, which is dependent on—
  - a. Want of means speedily and immediately accessible for performing the operation with the necessary degree of nicety.

asserts that this syncope and the consequent death were produced by the thrombosis of the pulmonary artery.

Another cause of death after labour is *air in the vascular system*. Of this, M. Hervieux relates the following case:—

CASE.—On July 10th, 1863, M. F—, pregnant for the second time, was delivered in the Maternité of a male child, after a natural labour. Her progress was favourable up to July 20th; and, being of good general health and strong constitution, she had been selected, at her desire, as a wet-nurse. On July 20th the lochia were very foetid; and an injection of infusion of camomile was ordered. Care was taken that the syringe did not contain air. The injection produced no pain; the fluid which returned was very foetid. On the 21st the injection was repeated at 7 P.M., with the same care as before. The patient was now seized with rigor and grinding of the teeth, and lost about 750 *grammes* (nearly 22 ounces) of fluid blood. The hæmorrhage was arrested by ergot. In the course of the evening the patient became violently excited by a quarrel with one of her neighbours, and screamed frightfully. Opium was given in pills, without any result; and the patient died suddenly at half-past twelve in the night, in a paroxysm of furious delirium. On post-mortem examination, at the end of twenty-three hours, the heart was found to be large, round, as if distended, and yielding readily to the pressure of the finger. The vessels proceeding from the heart were each tied in two places, and cut through between the ligatures. The heart, being thus removed, was placed in water under an inverted jar. On making an incision into the right ventricle, large bubbles of gas escaped into the upper part of the jar. The left ventricle also yielded some gas, but much less than the cavities of the right side. On analysis, this gas was found to consist of oxygen, 7; carbonic acid, 11; and nitrogen, 82 parts in 100. The volume of the quantity examined was almost that of forty or fifty *grammes* of water. The lungs were perfectly healthy; there was no trace of emphysema or of congestion. The inferior vena cava was much distended with gas, which escaped with a slight hissing noise on making a puncture with a scalpel: it was quite inodorous. On making a larger opening, a blackish frothy liquid escaped, evidently a mixture of blood and gas. The vena cava was distended through its entire extent; but no gas was contained in the common iliac veins, nor in the veins of the uterus and ovaries, nor in the superior vena cava and its branches. The pulmonary veins contained a little gaseous fluid. There was no trace of inflammation or suppuration in the uterus: the cervix was rather soft, friable, and ecchymosed. On the inner surface of the wound, at a point corresponding with the fundus, were two small erosions, each as large as a pin's head. Small red clots were still adherent to them, and from them must have proceeded the hæmorrhage which took place on the evening of July 21st. The Fallopian tubes and ovaries were healthy. From want of time, the head was not examined.

M. Hervieux observes that this is the first occasion on which the gas found in the veins in sudden death after labour has been collected and analysed. As to its source in the present case, it could not, he says, be referred to cadaveric decomposition; for the body of the patient had not undergone any remarkable change; and, on the other hand, he has never found the heart and vessels distended with gas in women who have died of metro-peritonitis, although putrefaction rapidly takes place in such cases. The gas could not, for several reasons, have been introduced by the syringe in injection; and if it had been, how did it contain eleven per cent. of carbonic

acid and only seven per cent. of oxygen? M. Hervieux is disposed to attribute the presence of the air to the uterine hæmorrhage which took place. He suggests that the mass of blood, diminished in quantity and impaired in quality, may have readily become the seat of some grave perturbation, of hysterical character, leading to the development of gas.

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### ART. 139.—*Mortality in the Vienna Lying-in Hospital.*

By Dr. —.

(*British Medical Journal*, April 30, 1864.)

Professor Spaeth, of Vienna, has given a sketch of the Lying-in Hospital at Vienna from 1784 to 1863. The hospital was established by Joseph II., in 1784. From 1784 to 1822 it was under the direction of Simon Zeller and J. L. Boër. The number of births during that period were 71,395, and the number of deaths 897; the mortality being about 1·25 per cent. The epidemics during this period of thirty-seven years were not severe. From 1822 to 1833—the time when the second clinical lying-in department was established—32,336 women were delivered; and of these 1714 died, being a mortality of 5·30 per cent. During these eleven years epidemics were almost constantly present. From 1833 to 1839 Klein and Bartsch directed the hospital; and during this period there were in the first clinique 12,253 births and 902 deaths, and in the second clinique 9353 births and 620 deaths; consequently, the mortality of women was 7·36 and 6·62 per cent. Puerperal diseases were almost constantly present; but were most fatal in the year 1836-37. During the next period, 1839 to 1847, the management of the two cliniques was altered, the physicians having exclusive charge of the first clinique, and the second clinique being chiefly under the management of midwives. The effect of this change was well marked. The mortality in the second clinique diminished; of 21,155 women confined, 810, or 3·82 per cent., died; whilst under the fearful epidemic of 1842-43, the mortality in the first clinique increased to a terrible height, 2482, or 10·14 per cent., dying, out of 24,455 confined. The greatest mortality occurred in December, 1842, reaching, in fact, to 31·3 per cent. In 1847 Dr. Semmelweiss called attention to the origin of puerperal diseases through infection from decomposed animal matters, and took measures for furthering cleanliness; ordering all students to wash their hands in chlorine water before attending the women. Hereupon the mortality rapidly diminished; and up to 1849 (when Semmelweiss gave up the direction), of 6589, only 142 died, or 2·15 per cent. At the same time in the second clinique the mortality was also low. From this time up to 1864 the mortality has never been so great as in former times, although the hospital has been visited by severe epidemics. In 1854 and 1855 there was a mortality of 9·1 per cent. and 5·4 per cent. in the two cliniques. The last epidemic occurred in the winter of 1861-62, and produced a mortality of 7·7 and 10 per cent.

Professor Spaeth discusses the cause of these visitations. They cannot, he says, be cosmical or telluric ; because outside the hospital, in the neighbourhood, no such mortality has occurred. Neither does it appear that these visitations had any connexion with epidemics of typhus, scarlatina, measles, &c. ; for it often happened that, when these diseases were raging, the Lying-in Hospital was in a healthy condition. Nor does it appear that cold has any direct influence on the health of puerperal women ; and if these diseases are more common in winter, the cause is to be ascribed to the want of opening the windows. For these and other reasons, the professor is convinced that the cause of puerperal epidemics lies in the hospital itself, and that its influence is exerted either during labour or within an hour after its completion. The chief, and probably the sole, agent of puerperal fever is decomposing animal matter, whether arising in the hospital or brought into it from without. The cure for the evil is, therefore, evident—great cleanliness, good ventilation, and separation of the sick from the sound. Semmelweis was too exclusive in considering that the puerperal fever was caused solely by the infected fingers of the dissecting student.

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ART. 140.—*On Diphtherial Gingivitis in Lying-in Women.*

By Dr. J. MATTHEWS DUNCAN.

(*Edinburgh Medical Journal*, December, 1863.)

Diphtherial inflammations of the genital organs of females in the various conditions of childhood, the unimpregnated and the puerperal states, have been described by various authors, and they have been observed sporadically as well as in the form of epidemics. But the affection of the gums of lying-in women, which is the subject of these remarks, has, it would seem, never attracted special attention.

Gingival diphtherial inflammation in a very intense, dangerous, and epidemic form, is the scorbutic gangrene of M. Bretonneau, of Tours, and its description by him forms an important epoch in the history of diphtheria generally. The cases, six in number, which came under Dr. Duncan's notice, were alarming chiefly on account of the fear that their progress might induce aggravation of the local evils, or that the disease spreading might become serious, especially if it involved the respiratory apparatus, where the mere presence of a false membrane must be of the greatest gravity. And experience in diphtheria justifies alarm, for cases of apparently slight diphtheritic disease of the throat sometimes prove rapidly fatal in the manners alluded to. Fortunately, in none of these cases of gingival diphtheritis did the disease spread beyond the gums and opposed buccal mucous surfaces, so far justifying the opinion of Trouseau (*Clinique Médicale de l'Hôtel-Dieu de Paris*, tom. i. p. 360), that of all the manifestations of the Syrian evil, this has most a tendency to localize itself in the same points without reaching neighbouring parts. Nor do these cases show any intense local inflammation, gangrene, or ulceration.

They were illustrations of the disease in a mild or slight form, of short duration, and having no epidemic character. The accumulation of sordes on the teeth were only slight; ulceration at the dental margins of the gums was once present to a small extent; the patches were whitish or ashy grey, and covered the whole gum from the dental margin to near the reflexion of the mucous membrane on the lip; they were sometimes friable, but generally tough enough to be removed in strips, if pulled off; no distinct red and elevated margin surrounded the patches, although redness and swelling of the gums generally was present; no bleeding took place from the gums; the buccal mucous membrane was affected in only one case; the glands about the angle of the jaw were slightly swollen and tender. In all the cases the labial aspect of both gums was affected. Besides these physical appearances, the following symptoms were present:—fever, generally slight, but in one case so violent as to be at first taken for a weed; tenderness of the teeth, and inability to eat solid food; salivation severe only in one case, in one case difficulty of swallowing and pain in the act. The cases all occurred in the course of the second and third weeks after fortunate confinements. In one case the disease supervened on a mammitis slowly advancing to abscess. In one case it had the effect of completely and quickly arresting the secretion of milk.

The disease lasted for seven or eight days in each case; that is, patches were still undetached on the sixth day. In two cases the disease reappeared after a few days' absence, and ran its course as in the first attack, but with less extent of exudation and less severity of symptoms.

Beyond the use of mild astringent gargles in the treatment of the cases, nothing specially demanding mention was done. Each case required special care, and a judicious use of ordinary remedies.

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ART. 141.—*A Case of Extra-Uterine Fœtation treated successfully by Operation.*

By Mr. JOSEPH THOMPSON, of Nottingham.

(*Lancet*, November 28, 1863.)

At a meeting of the Pathological Society, Mr. Henry Thompson presented for the author a preparation exhibiting various portions of a fœtus, of nearly full term, which he had removed by cystotomy. Mrs. — sent for Mr. Joseph Thompson, at Nottingham, about twelve months ago, having the conviction that she was the subject of stone in the bladder. He sounded her, and found some hard bodies in the cavity. He examined a portion which had come away spontaneously beforehand, and found it to be part of a fœtal vertebra. He then obtained the following history:—Seventeen years ago she had been confined, and seven years ago she thought herself pregnant. The symptoms continued up to the full term; everything was prepared; labour pains came on, but all gradually subsided, and she



believed that she had been mistaken. The milk disappeared, and she commenced again to menstruate until nine weeks before. Mr. J. Thompson decided to operate for the removal of these matters, and made an oblique incision right and left through the urethra, enabling him to introduce his finger into the bladder and extract numerous portions of the fœtus. The arms, pelvis, legs, and parts of the skull were then drawn into the bladder from a cavity on the left, and then removed. She finally recovered without any bad symptoms, a slight incontinence of urine alone persisting. Mr. Thompson concludes his very interesting account of this case with some remarks on the operation adopted, and with some statistics relating to the subject in general.

ART. 142.—*Case of Twin Conception, with Expulsion of One Child at the End of the Second Month, and Retention of other Child to the End of the Sixth Month.*

By Dr. JOHN GASON, of Rome.

(*Medical Circular*, November 25, 1863.)

The following case of retention of a living child in the uterus for four months after the expulsion of the first in a twin conception appears deserving of record from the rarity of its occurrence, and from the possibility of the birth taking place at the regular time. Burns, in his practice of midwifery, in a note says:—"It has been known that, in consequence of the death of one child, the uterus has suffered partially, and expulsion taken place, but the other child continuing to live, has preserved the action of gestation in that part of the uterus which, properly speaking, belonged to it, and pregnancy has still gone on. This, however, is an extremely rare occurrence, for, almost in every instance, the death of one child produces an affection of the action of gestation in the whole uterus, and the consequent expulsion of both children."

CASE.—I was sent for to see Mrs. A. B., æt. twenty-six years, on the evening of March 27th, 1863. She stated to me that while sitting in an easy-chair near the fire she felt a rush of water from the vagina. She immediately went into her bedroom and sat on a vessel into which about one pint and a half of a straw-coloured fluid passed. She did not pass any urine at that time. She went to bed immediately, and applied ice over the region of the uterus. There was no hæmorrhage. I saw her in about three-quarters of an hour after this occurrence; I then found the uterus firmly contracted, the fundus inclined to the right side, and extending about one inch above the level of the umbilicus. Mrs. A. B. was much agitated and hysterical. The following history of her case was given me by a very near relative who was with her, and it was strictly confirmed by her husband, and by the lady herself subsequently:—

"Mrs. A. B. had menstruated regularly up to September 29th, 1862, which was the day on which she ceased to menstruate. On December 1st, when in England in the country, having been in the family way for two

months, she miscarried. She had no medical man with her; there was a considerable discharge of blood, a part of which was in clots; two of these clots she remarked for their size, one of them being veined all over. The red discharge continued to flow for ten days, when it ceased entirely; she never menstruated since that time." Mrs. A. B. has been married four years; she had no doubt on her mind of having miscarried at that time, though it was the first time that she had been in the family way.

On stating my opinion that I believed Mrs. A. B. was between five and six months in the family way, I was met with such an expression of doubt from the foregoing circumstances, that my opinion was canvassed with more distrust than belief in the accuracy of my diagnosis, as "the impossibility of such a thing being the case; how could so and so be the case, when such a thing happened?" &c.

As there were no urgent symptoms, no further discharge of water or any blood, I made no examination at the time, prescribed a sedative, and left positive orders to be sent for immediately on the occurrence of any fresh symptom.

I was sent for at five o'clock next morning. She was then in labour; complained of pains in back and lower region of the abdomen; os uteri dilated to the size of half-a-crown; head presenting; pains frequent and strong. Administered chloroform but not to produce insensibility: from this great relief was derived; child born at 7 A.M. Immediately on its birth it commenced crying feebly, but distinctly. It survived about forty minutes. As soon as the placenta became detached from the uterus respiration became more feeble and at longer intervals. I did not tie the cord for thirty minutes after the birth, at which time all pulsation in the cord had ceased. The umbilical cord was long, thick, and encircled the neck of the child. The fœtus was about nine inches long, very thin; skin of a dusky red colour, well formed; the eyelids adhered closely to each other, and could not be separated. The arms of the fœtus were crossed over the breast.

The mother recovered without any untoward symptom, having a copious supply of milk.

The placenta was small but perfect in texture and formation, and I could not detect any irregularity in its appearance or in that of the membranes. This was her first confinement, and she had had no miscarriage previous to that mentioned in December last.

### ART. 143.—*Pregnancy after Closure of the Os Uteri by Operation.*

By Mr. JAMES R. LANE, Surgeon to St. Mary's and the Lock Hospitals.

(*Lancet*, February 20, 1864.)

CASE.—C. R.—, who stated her age to be forty-five, was first admitted into St. Mary's Hospital in May, 1862. Five months previously she had been delivered of her second child, at the full period, after a labour of twenty-four hours' duration. From that time till her admission she had been totally unable to retain her urine. Her clothing was in a continual state of saturation, and her labia and thighs were severely excoriated. I found it by no means easy to discover whence the escape took place, for the vesico-vaginal septum and the urethra were perfectly sound throughout;

and, judging from the difficulty attending the investigation of this case, I think it not unlikely that vesico-uterine fistulæ may have been sometimes overlooked, and the incontinence attributed to some other cause, such as paralysis of the sphincter of the neck of the bladder. I found, however, on examination with a speculum, that a small quantity of fluid could be seen to flow from the os uteri into the vagina, and I discovered further, by digital examination, that about half an inch above the os uteri, which was large enough to admit the tip of the finger, there was an opening in the canal of the cervix, leading forwards towards the bladder. The case was rendered perfectly clear when I found that a sound introduced into the bladder by the urethra could, by a little management, be brought into contact with the finger in the cervix uteri.

The question then was how to remedy the evil. I found that two plans of operation had been suggested by M. Jobert. The first was to make free lateral incisions in the cervix uteri and upper end of the vagina, so as to convert the cervix into an anterior and posterior flap, by separating which the fistulous opening could be got at, and sutures applied to it. The second plan was to close up the os uteri, so as to prevent the urine from escaping, but leaving the fistulous opening uninterfered with, and depending upon it to afford an outlet through which the menstrual fluid could escape into the bladder.

The first method was, of course, physiologically preferable; but its danger was, in my opinion, considerable, as evidenced by the only case in which it was practised by Jobert, while its success was exceedingly doubtful. I therefore preferred the second plan, that of closing the os uteri, and put it in practice on May 14th, 1862. I will not dwell upon details, but will merely say that I denuded the edges of the os uteri, and brought them together by means of four silver-wire sutures. The incontinence of urine was arrested from that moment, the wound healed soundly, and the patient left the hospital quite well in three weeks. She menstruated through the bladder before she left, without inconvenience or pain, and menstruation was continued regularly in the same way for three months, when I lost sight of her for a time. Towards the end of the year, however, she applied to me, telling me that since August or September she had ceased to menstruate, that she had experienced various uncomfortable sensations in the uterine region, and had been increasing in size. On investigation, I found that there was certainly a tumour in the hypogastric region, which appeared to be an enlarged uterus; but on examination per vaginam, the os uteri appeared to be as firmly closed as when she left the hospital in June.

These facts seemed to admit of but one conclusion—viz., that the fistulous opening had spontaneously closed, or had become in some way blocked up; and that the menstrual fluid, being unable to escape, had accumulated within the uterus, and was the cause of the enlargement. Pregnancy, with the os uteri firmly closed, was a contingency which never presented itself to my imagination, nor I believe to that of any of those who saw the patient.

The appropriate treatment, therefore, appeared to be to reopen the os uteri to allow the accumulated matters to escape; after which, supposing the fistula to be really closed, she would be restored to her original and normal condition.

She was readmitted into the hospital early in January, 1863. On Jan. 10th, I attempted to divide the uniting substance with a small knife guided by my finger; but I found it impossible to do this owing to the mobility of the uterus, and the firmness of the uniting medium. I therefore resorted to a trocar and canula, a speculum having been introduced to bring

the os uteri into view ; but before the trocar would penetrate I found it necessary to hold the os uteri steady with a vulsellum, and to use an unexpected degree of force. Only two or three drops of blood escaped through the canula ; but I satisfied myself that I had really opened into the uterus by passing a small bougie, which readily penetrated to the depth of about three inches. The next day I was informed that a considerable quantity of watery fluid had escaped during the afternoon after the puncture had been made, and that she had complained of pain. The discharge of water, however, had soon ceased, and not been repeated. On the following day I learned, to my extreme surprise, that she had been taken ill during the night, and that a fetus of about four months' date had made its appearance. The watery discharge which followed the puncture was, therefore, doubtless the liquor amnii, and was thus clearly accounted for. The patient recovered rapidly from her miscarriage ; but the cicatrix formed by my operation was, of course, completely broken down by the passage of the fetus, and the os uteri was permanently reopened. The urine escaped through it precisely as it did before my first operation. She left the hospital for a time on Feb. 10th, but shortly afterwards applied to me with an urgent request to be readmitted, in order that the original operation might be repeated. This I did on March 14th, in the same way as before, and with the same result. Nothing untoward occurred ; the wound healed firmly, and the incontinence of urine ceased. She menstruated through the bladder about a week after the operation as on the former occasion, and left the hospital in about three weeks. I saw her at intervals for a considerable time. The last occasion was in September, since which I have lost sight of her ; but I know she would have immediately come to me had anything unusual occurred. When I saw her in September, which was six months after the last operation, she had menstruated regularly through the bladder without any difficulty. No trace of menstrual secretion had been discharged excepting through the bladder, nor had any escape of urine occurred through the os uteri ; neither was there anything to indicate a repetition of the mysterious pregnancy which had followed the first operation.

The question which next suggests itself is, how conception could in this instance have taken place. Either the seminal secretion must have passed through the urethra and bladder into the uterus—an explanation which I am very unwilling to adopt—or there could not have been an absolutely complete closure of the os uteri. If, however, there were really an aperture of this kind left, it must have been exceedingly minute ; for it was quite undiscernible by repeated examination, and no appreciable amount of urine escaped through it. Indeed, the union appeared to be singularly firm, as evidenced by the difficulty I found in penetrating through it. Had the union not been so firm, I should have suggested the possibility of a portion of it having been broken down during sexual intercourse, and of an inlet for the seminal fluid having been thus provided. A small opening so caused might have closed again spontaneously after the mischief, if I may so call it, had been done. On the whole, however, I am inclined to think that a capillary channel may have existed along the track of the wire sutures, one of which had disappeared and escaped detection when the others were removed, and was not taken away till a considerable time afterwards. Should this latter supposition be correct, the fact is a very curious one, as showing how minute a communication may suffice for impregnation ; and it is especially interesting in these days, when enlargement of the natural dimensions of the canal of the cervix uteri by dilatation or incision is recommended by high authorities, and frequently practised for the cure of sterility. On this point M. Nélaton has made some humorous remarks, contrasting the size of

the spermatic filaments with that of the passage they are intended to traverse, and suggesting that an enlargement of that passage, instead of facilitating their transit, might seriously embarrass them by causing them to lose their way.

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ART. 144.—*An Essay, Historical and Critical, on the Mechanism of Parturition.*

By Dr. WILLIAM LEISHMAN, Physician to the University Lying-in Hospital, and to the Royal Infirmary, Glasgow, &c.

(London: Churchill, 1864. 8vo. pp. 129.)

"The object of this essay," the author tells us, "is far more a plea for the study of nature than to introduce any new theories, still less to induce others to view the art in a light too exclusively mechanical. Impressed with the belief that the mechanism of parturition, a knowledge of which may well be termed the keystone of the art of midwifery, is in our day but imperfectly understood by many, I venture to bring it here under the notice of the profession. Of late years the subject seems to have attracted more attention than perhaps at any period since the days of Naegele; and this is perhaps due to the confusing effects which the varied modes of description adopted by the many able modern writers on midwifery, both in this country and abroad, have had upon the mind of the profession, leading individuals to study for themselves what in truth it is exceedingly difficult to describe clearly and accurately in writing. And hence, as an almost inevitable result, new views have been propounded which, as inevitably, have conducted in later years to perplexity and doubt in regard to what was previously comparatively clear. My main object in the following memoir is to place before my readers as clearly as the difficulty of the subject and my powers of description will admit, the great mechanical laws which guide us in the practice of the obstetric art. I shall endeavour also to place before them, with such fair and impartial criticism as I may think necessary, all the more modern views which appear to me worthy of special notice."—(p. 4.)

We commend this thoughtful and suggestive essay to our readers.

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(B) CONCERNING DISEASES OF WOMEN.

ART. 145.—*On some Points connected with the Pathology of Fibrous Tumours of the Uterus.*

By Dr. ROUTH.

(*Lancet*, December 5, 1863.)

The author states that the simplest idea of a fibrous tumour is to look upon it as so much fibrous tissue. Some confusion has arisen

among authors from the different meanings given to such terms as "fibrous growths," "fibro-cellular," "fibroid tumours," &c. Describing first their appearances to the naked eye, and quoting Dr. A. Clark's description of their juices, Dr. Routh proceeds to speak of their varieties: *fibromas*, including *hysteromas*; *fibroids*, including recurrent fibroids: describing particularly their microscopical resemblances and differences. Examples are given showing their occasional cancerous complication as well as transformation. Dr. Routh dwells at length upon the presence of muscular organic fibres in fibrous tumours, but remarks that this structure has a much lower vitality than true muscle. Having alluded to the size which they sometimes attained, he speaks particularly of extra-uterine fibroid and pelvic bodies, which are merely extra-uterine fibrous tumours accidentally detached, and fixing themselves elsewhere to the pelvic rim.

The transformations which fibrous tumours undergo next occupy attention. 1. Softening, including a sarcomatous change, œdema, the formation of pseudo-cysts and true cysts, suppuration, and fatty degeneration. 2. Changes of softening. 3. Absorption. The cystic and suppurative transformations were dwelt upon at length. Dr. Routh alludes to Mr. Savory's opinion of the non-existence of true cysts of the uterus—*i.e.*, cysts lined by true epithelial secreting membrane. He shows, however, that one case (Dr. Wilson's) exists, which proves the occasional although rare presence of uterine true cystic disease. Most other cysts are pseudo-cysts or geodes, covered by a fibrous envelope and *débris* of fibro-plastic and muscular ingredients, which constitutes the original tumour. The examples of true cystoid disease in tumours occasionally attached to the uterus, Fallopian tubes, and broad ligaments, are productions analogous to monsters by inclusion—*i.e.*, male extra-uterine pregnancies—or to those bodies, sometimes loose, sometimes fixed, and found in the abdominal cavity, containing hair and teeth, &c.: in fact, examples of metamorphosis in some Graafian vesicle which has escaped. These tumours, if attached to the uterus, are generally fixed to its external envelope only, as in Mr. Nunn's case of Fibro-cystic Disease of the Uterus, &c.; but the uterine structure is not continuous with the growth.

The fluid of pseudo-cysts is next considered. The microscopical appearances in examinations made by M. Blin, Dr. A. Clark, Mr. Savory, and himself, are referred to. The elements of true cystoid ovarian disease are absent, fibro-plastic and muscular *débris*, in the main, occupying their place. The knowledge of this will prove useful in differential diagnosis. Several examples of pseudo-cysts are recorded, and the change from a true fibroid is shown to have been proved by ocular demonstration in one of Atlee's cases. Suppuration is not so uncommon as is generally supposed in fibroids, and several examples are detailed. One variety in particular, occurring in harder tumours, when these are extra-uterine and broke by an opening other than through the os, is very apt to be mistaken for cancer. Absorption of a tumour occasionally

takes place as an effort of nature, of which two examples are mentioned.

Dr. Routh concludes by a reference to the causes of fibrous tumours. These he believed to be local, sexual excitement giving rise to local congestion and hypertrophy. After quoting the opinions of some French pathologists to the same effect, he refers to statistics in proof. Out of some three hundred cases of fibrous tumours and polypi (156 tumours), 80·2 per cent. are married women, and only 19·8 per cent. single. The majority (82·9 per cent.) have borne children. Their occurrence immediately succeeds the age when sexual passion, frequency of marriages, and fecundity are greatest—namely, between twenty-six and thirty-five. This is far more obvious when the number of women between these ages is compared with that of younger and older women. When present in old women, they are generally of several years' duration. Their occurrence in some single women may be referred, on Mr. Brown's supposition, to habits of delectation.

ART. 146.—*On the Treatment of Narrowed Os and  
Cervix Uteri.*

By Dr. GREENHALGH, Physician-Accoucheur to St. Bartholomew's Hospital, &c.

(*Medical Circular*, March 23, 1864.)

The following remarks are quoted from some notes on some of the cases under Dr. Greenhalgh's care in St. Bartholomew's Hospital:—

"The first two patients that we visited were suffering from one of the consequences of endo-metritis—namely, a narrowing of the cervix uteri, and a contraction of the os, for the removal of which Dr. Greenhalgh was using a cylinder stem, made of silver, and of sufficient length to traverse the cervical canal, and enter the cavity of the uterus.

"This instrument he finds most valuable in such cases. It is well rounded at its summit, so that there is no sharp point or angle to irritate the uterine walls; its sides are also well rounded, and terminate below in a circular plate, which, projecting beyond them, serves as the base of the instrument, and hinders its passing bodily into the cavity of the wound; being a hollowed cylinder, it admits of the entry into its interior of the uterine sound, and upon and by means of this latter it is passed into the womb, where, having a curve for the purpose of adaptation with the axis of the uterus, it is easily retained; the patients expressing themselves as comfortable, and few complaining of any annoyance from its employment. To obviate the tendency which it has to slip from the wound, Dr. Greenhalgh, when necessary, has a hook affixed to it in such a manner that the more the instrument protrudes from the os, the more the hook enters the parietes of the viscus, so that there

can be no expulsion of the instrument, and even very little prolapse of it, from the cervix.

"There are no perforations in the top or sides of this tube in order that the discharges from the organ may find an exit through the centre of it, nor is it removed during the menstrual periods, Dr. Greenhalgh considering its *retention* at *these* times most beneficial, inasmuch as the menstrual fluid makes its way along the sides of the tube, and by a kind of hydraulic pressure helps to effect the dilatation of the abnormally constricted cervix.

"Its retention at the menstrual period costs the patient no additional pain. We believe Dr. Greenhalgh also employs it in certain cases of dysmenorrhœa. Upon the occasion of our visit to the wards under his care, he related the following anecdote, illustrative of the non-inconvenience—nay more, of the comfort—experienced in the wearing of the instrument by dysmenorrhœal patients: A young lady, suffering from severe dysmenorrhœal symptoms, had placed herself under his care some time ago; she was treated by means of this instrument, and expressed herself as being immensely relieved. After a time she discontinued her visits, and Dr. Greenhalgh heard nothing more of her till after the lapse of some months, when she presented herself to him in order to tell him that she was quite well, as there was now no unusual amount of pain with the periods. The patient was a little annoyed that she had *lost* the instrument, having done so, she said, 'through forgetfulness of its presence; however, upon vaginal examination, it was detected in the uterine cavity, having no doubt worked its way into it while the lady was upon the continent, and to use her own expression, 'had been racing over the mountains day after day.'

"No ill-consequences had arisen from the detention of the instrument in the interior of the womb.

"The second of these two cases had had, in addition to the narrowed cervix and os, a thickening, enlarging induration and eversion of the lips of the os, a condition which Dr. Greenhalgh had removed by the application of *potassa fusa* to the everted lips, until they were completely melted down to their natural size; the cervix and os were subsequently divided by means of the double-bladed hysterotome, which Dr. Greenhalgh has himself devised. He lays great stress upon the necessity of—in instances similar to the present—passing the hysterotome sufficiently high up, so that the os externum, the os internum, and the cervix itself, may be all well divided, the incision being made to extend well into the body.

"We examined the condition of parts, and found the cervix fully open: the os likewise patulous, and its lips no longer enlarged, everted, and thickened; the structures being restored to their original condition, as nearly as could possibly be expected, in the short time the woman has been under treatment."

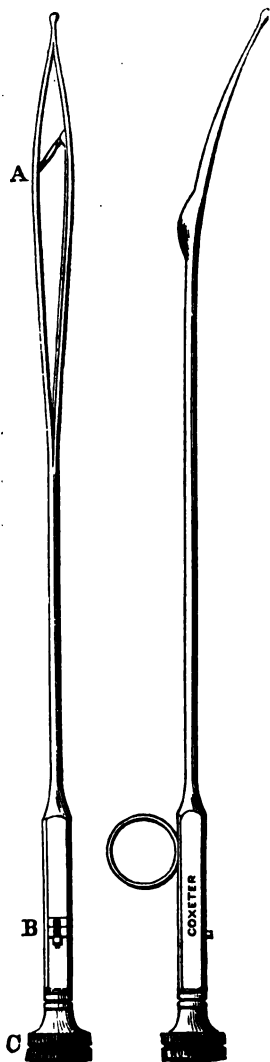
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ART. 147.—*Notice of an Instrument for dilating the Canal of the Cervix Uteri.*

By Dr. WILLIAM O. PRIESTLEY, Professor of Obstetric Medicine in King's College, London.

(*Medical Times and Gazette*,  
March 5, 1864.)



Mr. Coxeter, of Grafton-street, has recently made, under Dr. Priestley's direction, a dilator for the os and cervix uteri, which promises to be very convenient and effective. The instrument consists of two blades in lateral apposition, united at their extremities, and again about five inches lower down, being ununited in the interval. The form is that of an uterine sound. A projection two and a half inches from the point indicates the length of the uterine cavity, and the finger can ascertain by its position how far the instrument has passed into the womb. The mechanism is borrowed from Mr. Henry Thompson's dilator for the male urethra. A small cross-bar, forming a lever, lies between the ununited portion of the blades at A, and this is made to assume a position more or less horizontal by means of a wire passed through the stem of the instrument, which is worked up and down by means of a screw (C) attached to the handle. An index at B shows how far the blades are separated in the progress of dilatation, and a ring is fixed to the under side for the insertion of the fourth or fifth finger of the left hand, to steady the instrument, while the finger and thumb of the same hand are employed in turning the screw. In this way the right hand is free to guide the point of the sound in the necessary direction, and to keep it *in situ* during the expansion.

The advantages possessed by this form of dilator are,—that it can be fashioned very small for extreme instances of contraction, where it would be very difficult to pass in a sponge-tent; and, although the flexibility of the uterine sound is not consistent with its mechanism, yet it can be made of any curve required.

The dilatation produced is lateral, gradual, and progressive, without necessarily being so forcible as to rupture tissue, and there is little tendency in the instrument during the separation of the blades to work itself downwards and withdraw from the os uteri.

Further, the whole cervical canal, including the os uteri internum, can be widened by this instrument, but its greatest power of expansion corresponds to the os uteri externum, where dilatation is most required.

"The instruments previously in use," says Dr. Priestley, "have lacked some of the advantages mentioned, and have thus been less useful. Among others, I possess a dilator employed by the late Dr. Edward Rigby, constructed like a pair of polypus forceps, with the blades terminating in a long and slender duckbill, for insertion into the os uteri. The instrument could not be passed into an os uteri much contracted; moreover, in any case I have attempted to use it I have not succeeded in penetrating within the os uteri beyond half an inch, and it has slipped out of the orifice directly separation of the blades was attempted. An ingenious instrument was exhibited by M. Mathieu, of Paris, in the late Industrial Exhibition. This, also, I have employed; but it has the disadvantage of dilating in an antero-posterior direction, and in practice tends to withdraw from the canal of the cervix instead of stretching the contracted parts. This last objection also applies to those exhibited by Charrière. I do not propose here to discuss the propriety of dilating the os uteri, or to point out the instances in which dilatation should be attempted. I think it is generally admitted that cases occasionally occur in which this treatment may be pursued with advantage if it can be carried out effectually; and my own experience leads me to believe that gradual dilatation is more likely to be followed by permanent widening of the cervical canal than the more forcible and rapid distension produced by a sponge-tent.

"Lastly, I may be permitted to remark that the relief experienced in some cases of dysmenorrhœa after dilatation of the cervical canal is not always apparently in proportion to the amount of previous contraction as determined by the easy or difficult introduction of the uterine sound in the menstrual interval. There are, I believe, patients to be relieved by dilatation who have no marked contraction of the orifice, but who suffer pain because the menstrual fluid is secreted more rapidly in the uterine cavity than it can escape through a cervical canal of ordinary calibre, or else, it may be, have the aperture narrowed for the time being by spasmodic contraction of the orifice such as takes place in spasmodic stricture of the urethra in the male.

"I have been informed at Mr. Coxeter's that, some time ago, another practitioner had ordered Mr. Thompson's urethra dilator, without the modifications I have suggested, but with the view of employing it for dilatation of the os uteri. I have not been able to ascertain this gentleman's name; but as this short paper is simply to notice a useful instrument, and not to put forth a claim to priority, it is of little consequence."

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ART. 148.—*On the Use of Wire Loops, Horse-Shoe Wires, &c., &c., for Correcting Ante- and Retro-Version, Obliquity, and Prolapse of the Unimpregnated Uterus.*

By Dr. CHARLES CLAY, of Manchester.

(*Transactions of the Obstetrical Society of London*, Vol. v. 1864.)

The author, in this paper, endeavours to point out the positive injury done by the use of the generality of pessaries, particularly those of the old class, which, on account of their cheapness, are still sanctioned by the profession. Improved stem pessaries are shown to be so expensive as to be little applicable to the extent of the evil for which they are proposed. In order to meet this difficulty, the author proposes a new and very simple series of instruments suitable for various malpositions of the uterus—ante- and retro-version, obliquity, and prolapse—and at a cost so extremely small as to favour their general application. These instruments are made of medium-sized copper wire, bent and soldered in a convenient form, and tinned. The paper is illustrated by a lithographic plate.

ART. 149.—*On Fibrous Tumours of the Uterus treated by Surgical Means.*

By Mr. J. BAKER BROWN, Senior Surgeon to the London Surgical Home.

(*British Medical Journal*, March 26, 1864.)

The object of this paper is to confirm a practice previously advocated, by fourteen additional cases, and at the same time to show that in most cases a very modified surgical treatment is sufficient; for, whereas, Mr. Brown has hitherto divided his operation into two parts—preliminary incision of the os and cervix, and gouging or breaking up the tumour—he now finds that the first step will always arrest the hæmorrhage and the development of the tumour. In some cases the tumour decreased, and when small it would entirely disappear, more especially if of recent origin; and even when gouging was required, a much slighter operation is sufficient. Mr. Brown now uses only a pair of long-handled, blunt-pointed, curved scissors. The author enters minutely into the mode of operating, and lays great stress on carefully and thoroughly plugging the incisions and whole vagina with oiled lint after the operation. Of the fourteen cases related, ten were cured of the hæmorrhage by the incision of the os and cervix uteri alone, and one was relieved; in two only was it necessary to perform the second operation, both resulting in cure of the tumour; in six cases the tumour had either entirely disappeared or materially after incision alone. Of the three deaths, one had occurred from peritonitis, resulting from exposure to cold and the restlessness of the patient; one from organic disease

independent of the operation; and one from pyæmia. Out of between twenty and thirty cases occurring in his private practice, the author states that he has had one death, in a patient whose case was complicated with hæmatocele; and that in his public practice he has had as many more as are now given, with no more deaths.

The following practical conclusions are drawn :—1. The fact of the curability of these tumours is materially confirmed by these cases. 2. It is not necessary in many cases to do more than incise the os and cervix, thereby much lessening the danger of the operation. 3. The hæmorrhage is almost invariably arrested by the incision of the os and cervix. 4. The cure of these fibrous or fibroid tumours by surgical means, without the danger of enucleation, is now firmly established, as proved by Dr. M'Clintock, Dr. Routh, Dr. Dawson, of Newcastle-upon-Tyne, as well as by Mr. Brown.

ART. 150.—*The Placenta, the Organic Nervous System, the Blood, the Oxygen, and the Animal Nervous System Physiologically Examined.*

By Dr. JOHN O'REILLY, Resident Fellow of the  
New York Academy of Medicine, &c.

(London and New York : 1861. 8vo. pp. 204.)

After three years' hard study, the author of this volume confesses his incompetency to do the subjects treated of the justice their vast importance demands. It is to be regretted that this apology is by no means unnecessary; but then it must be allowed that an extensive and laborious practice is not very conducive to the cultivation of literature or science.

The chief object of the author seems to be to establish the following views:—1. That there is an intercommunication of nerves between the mother and fœtus; the organic nerves surrounding the maternal uterine arteries inosculating with those surrounding the hypogastric arteries of the fœtus. 2. That life "is a power or imponderable agent, located or centered in the organic nervous system, capable of preserving the body from decomposition as long as it continues in the organic nervous system, but requiring oxygen in order to make itself manifest, or rather the operations which characterize life manifest—viz., respiration, circulation, and animal heat." 3. That life is imparted to the semen at the instant of its emission. 4. That the pineal gland is a ganglion of the organic nervous system, of the same class as the lenticular and superior cervical ganglions, &c. 5. That the capillary arteries form glands at their terminations; and, 6. That puerperal fever and erysipelas are identical. In addition, there are chapters on the various kinds of baths; on the *modus propagandi* of the human species; on syphilitic poisoning of the organic nervous system; and on *nœvi materni*. As a specimen of the way in which Dr. O'Reilly treats his subjects, we cannot do

better than quote his explanation of *the mode in which a mother communicates impressions of certain objects presented to her view to the fœtus in utero*. This gentleman says :—

“In accounting for certain marks impressed on the fœtus *in utero*, in consequence of objects presented under peculiar circumstances to the mind through the nerve-tubules of the retina, the nerve-tubules of the brain, the nerve-tubules of the spinal cord, the nerve-tubules of the spermatic ganglions, which communicate with the nerve-tubules of the spinal cord, the nerve-tubules of the organic nerves which surround the ovarian arteries, the nerve-tubules of the arteries distributed to the placenta, which communicate with the nerve-tubules of the nerves which surround the hypogastric arteries of the fœtus the impression of the object presented to the mind through the nerve-tubules of the retina is directly communicated to the fœtus *in utero*, through a continued chain of communication—viz., through the nerve-tubules of the animal and organic nervous systems, until it is eventually impressed on the fœtus *in utero*. Animal life, or what is called the mind, is coextensive with the nerve-tubules; the white matter contained in the nerve-tubules is of the same character as the white matter contained in the nerve-tubules of the brain; the white matter is the seat of the mind, precisely as the gelatinous matter contained in the tubules of the organic ganglions, glands, and nerves, is the seat of life in the organic nervous system. Life and animal life act in amity and unanimity; whatever disturbs one equally disturbs the other; whatever object is visible to one becomes also visible to the other. The object presented to the mind through the nerve-tubules may be said to communicate with the fœtus *in utero* through the nerve-tubules of the nerves, which connect it with the nerve-tubules of the retina. If a man looks through a long cylinder, he can observe a man's face at the extremity of the cylinder, whilst the man at the extremity can also observe the other, who is looking at him through the cylinder: just in the same way the mind can look through the cylinders of nerve-tubules at the fœtus *in utero*, whilst the fœtus *in utero* can communicate through the same cylinders with the object which is presented to it, and take its impression. The image of an object presented to the mother's eye can be daguerreotypied on the fœtus.”

(c) CONCERNING DISEASES OF CHILDREN.

ART. 151.—*On the Intestinal Croup of Children.*

By Dr. CLEMENS, of Frankfort-on-the-Main.

(*Journ. für Kinder Krankh.*; and *Schmidt's Jahrbücher*, No. 3, 1862.)

This disease, which our children have in common with the cow and the hog, has never yet been specified and contrasted with laryngeal croup. It is of less frequent occurrence, and not very dangerous; remaining always local, and not endangering life, unless a great portion of the intestinal mucous membrane is involved. The fibrinous

exudation may be copious enough to prevent, at least in the smaller intestines, the passage of the excrements. One child rallied from a dying condition after the sudden excretion of a ball, formed mostly of pseudo-membranes. The exudation is always much more copious than in the corresponding affection of the larynx.

*Symptoms.*—When the smaller intestines are affected, there is always diarrhoea, and sometimes also vomiting of half-digested matters. Like croup proper, this form also arises from a preceding catarrhal affection. The well-developed disease is marked by intense fever, with nocturnal exacerbations, and great change of the features within a very short time. Depression and emaciation are inseparable from a long duration. A rapid recovery follows the removal of the false membranes, although portions of them may continue to come away for several days. The patients are soon quite lively again, and regain their appetite in a short period.

*Prognosis.*—There is rarely any danger, except either from obstruction of the intestinal canal by too copious exudation, or from too extensive a portion of the mucous membrane being involved. In the latter case, the interrupted chylication may destroy life, as the obstructed respiration does in laryngeal croup.

*Complications.*—One of the four cases observed occurred subsequently to imperfectly developed measles. Plastic exudation of the intestinal mucous membrane probably happens frequently in this catarrhal affection.

## ART. 152.—*Operative Surgery in Children.*

By M. GUERSANT.

(*Bull. Gén. de Thé.*, Mars 15, 1863; and *British Medical Journal*, August 8, 1863.)

M. Guersant gives us the following as the conclusions he has arrived at in regard to the preparation of patients, the performance of operations, and the after treatment, derived from an experience of twenty years as Surgeon to the Children's Hospital, Paris.

*Preparation of Patients.*—Certain malformations, especially imperforation of natural openings, must be operated on at birth without preparation. The treatment of others, which do not interfere with the performance of the vital functions, and the child's growth, may be deferred to a later period: such as club-foot, phimosia, webbed and supernumerary fingers, complicated hare-lip, cleft palate, &c. In general, operations, even those which it is thought advisable to perform at an early date, are more likely to succeed if delayed a fortnight, three weeks, or a month, when there has been time for ascertaining whether the child thrives well, than if performed two or three days after birth. In the meantime, if there be danger of small-pox, the child may be vaccinated before being operated on.

If the necessity for operation be not urgent, it is a principle of good surgery to choose for its performance, both in hospital and in

private practice, a period of the year when the smallest amount of disease prevails, and especially when there is no epidemic. There will rarely be opportunity for operating in the spring, as has been hitherto advised; in general, the months of June, July, August, September, and even October, are to be preferred, as ordinarily presenting a more regular and less variable temperature than prevails at other seasons of the year. In these cases, the little patients should be vaccinated if this have not been already done; and even those who are fifteen or sixteen years old should be revaccinated as a precautionary measure. If this be not done, children who are in a fair way of recovery after operation may take the small-pox and die. M. Guersant performed disarticulation of the thigh, for osteosarcoma of the femur, on a child five years old; the wound was almost cicatrized and recovery seemed certain, when the patient, who had not been vaccinated, was seized with small-pox, and died thirty days after the operation.

It is of the greatest importance, before determining on an operation, that the surgeon should examine the patient with the most scrupulous attention, in order to ascertain that there is no internal disease or peculiar condition which may endanger the success of the operation and the life of the patient. Thus, it is extremely useful to know whether the child be liable to convulsions, or of the hæmorrhagic diathesis. M. Guersant has several times met with evidence of this diathesis in children. In one case of the kind he was obliged to defer excision of the tonsils in a little patient who had purpura hæmorrhagica; and it was not until a course of astringents and iron had been persevered in for two months that he decided to operate; and even then the excision was attended by alarming hæmorrhage. He advises that children subject to hæmorrhage should be prepared for operation by the internal use of perchloride of iron for a week at least. In another case a child from whom he excised the tonsils died of convulsions, to which it had been subject.

Certain preparations, according to the operation to be performed, are often indispensable. Thus, before opening an imperforate anus, the bladder must be emptied; before performing lithotomy, the rectum must be unloaded; and, in all operations, digestion must have been completed, and the bowels as freely evacuated as possible.

As to the *moral*, there is not much to be done as regards infants. Some children, however, may be led to submit to operation by being made to understand that if any pain is to be inflicted on them, it is for the purpose of curing them. Most, however, must be operated on by surprise. In all cases it is indispensable to have efficient assistants. If it be proposed to use chloroform, this should be sometimes attempted before the day of operation.

*Performance of Operations.*—In a tolerably large number of cases anæsthesia may be dispensed with. In opening abscesses, sounding the bladder, examining the rectum, and removing small polypi from that region, M. Guersant generally operates without chloroform. In some operations the use of this agent must be rejected, as in very nervous and impressionable individuals. In some such cases local

anæsthesia may be produced by the application of chloroform, or, still better, of ice; while, in other instances, as in excision of the tonsils and tracheotomy, no anæsthetic can be used.

There are many circumstances in which the use of chloroform is strongly indicated; and after having employed it in cases of 5000 or 6000 children, M. Guersant sees no reason to regret having done so. He uses Charrière's instrument; the anæsthetic may also be given on a sponge having a sufficiently large opening to allow the air to pass freely. He has never had to lament an accident from the use of chloroform. Very early age is not a contraindication to its use; he has given it to very young subjects; among others, to two children less than four months old, on whom he operated for strangulated hernia. He has often used chloroform to render children insensible during examination; as when they refuse to open the eyelids in diseases of the eyes, and in certain very painful cases of coxalgia. He advocates especially the use of chloroform in operations which give rise to much pain, and at the same time demand precision of execution, such as lithotomy.

The performance of an operation on a child demands the most perfect knowledge of anatomy on the part of the surgeon; for, the parts being of small extent, the incisions must be limited to the strictly necessary dimensions. As examples of the necessity of attending to this precept, he mentions tracheotomy and lithotomy in children two years of age; and says that it is plain, although many ignore the fact, that operations are more difficult in children than in adults. In certain cases, the precept which recommends the surgeon to operate slowly must be departed from; for children endure pain for a less time than adults, and losses of blood are generally more dangerous in them. Thus, the tonsils must almost always be removed very rapidly. In some cases tracheotomy must be performed quickly, in order to prevent the patient from dying under the surgeon's hands, especially if the veins have been opened and pour out much blood.

*Consecutive Treatment.*—The first point to be attended to is the ligature or torsion of vessels; and when only a small number of vessels have required to be tied or twisted after an amputation of one of the large limbs, or after extirpation of a tumour involving a great loss of substance, M. Guersant advises that the dressing should be delayed for half an hour or an hour after the operation. He says he has always followed this plan with advantage. This precept, which was given by Dupuytren, has the advantage of allowing time for the re-establishment of the circulation, and obviates the necessity of removing the dressings to arrest hæmorrhage which has come on after the application. If it be necessary, after certain operations, to plug the wound with perchloride of iron, this should be well diluted with water to avoid sloughing.

M. Guersant, following the advice of Dupuytren and Lisfranc, almost always renews the dressings on the day after the operation. The removal of the charpie and lint, the bandages and sutures not being interfered with, prevents the danger of many accidents. Erysipelas is prevented by the removal of charpie impregnated with blood and serosity; pus, if it have formed, is allowed to escape



from between the lips of the wound; and if the edges of the wound have been strangulated by the sutures being too numerous or drawn too tight, they can be removed or loosened. If there be erysipelas, M. Guersant has often seen benefit derived from the application of collodion. This, with the internal use of tincture of aconite, sometimes prevents purulent absorption—a very rare accident in children, but which occasionally occurs.

If the wound become pale and gray, the application of charpie soaked in solution of chlorinated soda is very useful; and the application of pure lemon juice has, in M. Guersant's hands, given a healthy aspect to an unhealthy-looking wound.

General treatment is often of still more importance than local treatment. Usually, if there be no convulsions (an accident which rarely occurs even after the most severe operations), or if there be no special contraindications, a nutritious diet should be allowed from the day of operation. Whenever it is possible, infants should be put to the breast from the first day, rather than be fed from a bottle; they should be allowed to suck as much as they desire, at intervals of two hours. For other children, the food should at first be liquid, and consist of milk and beef-tea; after the first day wine may be given. A return should be gradually made to the child's original food, to which may sometimes be added chocolate, coffee, quinine, and other tonics. This regimen is indispensable, unless consecutive internal disease set in and demand on the part of the surgeon the amount of medical knowledge necessary for detecting and properly treating them—without which there is no success in surgery. We must, M. Guersant says, never forget that the operator must be a physician before operation, a surgeon during the performance, and again a physician to terminate and even to bring to a successful issue many surgical operations.

Finally, all the means which have been here described may fail if the hygiene of the patients be neglected. Thus, all things being otherwise equal, children who are operated on in the town in the homes of parents in good circumstances, and who reside in well-ventilated and warmed rooms, according to the indications of the case, are in better condition for recovery than those who are operated on in hospitals, where numerous patients are collected in one room, of which the air is, in spite of all that can be done, more or less vitiated.

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REPORTS  
ON THE  
PROGRESS OF THE MEDICAL SCIENCES.  
*January—June, 1864.*

THE intention of the following Reports is to pass in review the principal additions to each department of Medical Science which have been placed on record during the preceding six months. It is not contemplated that they should be confined exclusively to the notice of what is new ; any fact or doctrine which may be considered practically useful will, although not strictly novel, be regarded as worthy of commemoration. It must be obvious to all who are aware of the immense mass of information which is almost daily put forth by the medical press of this and other countries, that the notice of every subject would be an impossibility. It therefore devolves upon the writers of each Report to select only such articles for retrospection as may possess superior recommendations, either of an intrinsic character, or in relation to the main end and aim of all medical knowledge—the alleviation of suffering and disease.

## REPORT ON MATERIA MEDICA AND THERAPEUTICS.

*Stimulants and Narcotics: their Mutual Relations. With Special Researches in the Action of Alcohol, Æther, and Chloroform on the Vital Organism.*

By FRANCIS EDMUND ANSTIE, M.D., M.R.C.P., Assistant-Physician to the Westminster Hospital, Lecturer on Materia Medica and Therapeutics to the School, and formerly Lecturer on Toxicology.

(London and Cambridge: Macmillan and Co. 1864. 8vo. pp. 481.)

Dr. Anstie considers that the conventional use of the terms "stimulant" and "narcotic" is based upon purely theoretical notions, which will not bear investigation. Writers speak, in the general way, of two distinct classes of therapeutic agents, which act, respectively, as stimulants or as narcotics; but when they come to particularize, it appears that very many drugs are capable of producing both these effects, and the whole subject is thrown into such confusion that nothing is more common than for the very same effect of a medicine to be described at one time as "stimulation," at another time as "narcotism." The whole matter, therefore, requires reinvestigation.

The first point, obviously, is to clear up the meaning of the word stimulus. Chapter I. is devoted to a historical inquiry into the origin of the doctrine of stimulus—a doctrine which is shown to have descended lineally from the metaphysical notions of vital action entertained by the ancients. Formerly stimulants were supposed to act upon an emotional part of our nature, intermediate between the body and the immortal soul, whose business it was, amongst other things, to react against external impressions. It was this *spiritual* conception of the reacting power of the organism which originally decided the form of therapeutical classification, and the phrases and ideas to which it gave rise hold their ground even at the present day, when metaphysical explanations of physiology have become unfashionable. Meantime, the rise and progress of a true

physiology have given us an insight into pathology which has enormously advanced that department of medical knowledge; but therapeutical science has stood still, or rather has contented itself with an empirical method of research which was *not* perfectly free and unbiassed, but, on the contrary, preserved the most decided traces of the old metaphysical way of looking at vital and morbid phenomena. In this way a condition of complete antagonism, amounting to a dead-lock, has been established between the principles of therapeutics as taught in the books, and the principles of pathology as developed from recent research. The author passes in rapid review the labours of Hughes Bennett, Todd, and Lister, on the pathology of inflammation; those of Bernard and Brown-Séquard on the effects of section of the sympathetic, and the important changes in the theory of muscular action proposed by Dr. Radcliffe; pointing out the direct tendency of all these researches to annihilate the physiological theories on the basis of which such definitions of stimulus as are to be found in our principal text-books of therapeutics (several of which are quoted) have been grounded. Chapter II. contains a detailed criticism of the several items of the popular creed, as to what constitutes a proof of antecedent stimulation. The author successively attacks the following assumptions:—1, That all mental “excitement”—2, that all increased sensibility and pain—3, that all convulsive muscular action—4, that all considerable increase of secretion—5, that all increase of the force or frequency of the heart’s action—6, that all increase of nutrition or formative action in the tissues—are to be considered proofs of “exalted vital force.” A comparison of these dogmas with the facts of everyday clinical experience, and with the recent discoveries of physiology, is sufficient, in Dr. Anstie’s opinion, to refute every one of them. Chapter III. contains the author’s formal suggestions towards the reconstruction of the doctrine of stimulus; it is argued that the word can only be used in a figurative sense. In order to clear the ground, Dr. Anstie explains the view of vital action which appears to accord best with the recent discoveries as to the correlations of vital and physical force; he uses Coleridge’s argument, that the physical forces are not merely “employed,” but are actually “assimilated” in the body; and that “assimilation presupposes the homogeneous nature of the thing assimilated;” and adopts the conception of “individuation—the internal copula of bodies . . . the power which discloses itself from within as a principle of unity in the *many*” as answering to the only “characteristic instinct or tendency of life, evident in all its manifestations, and involved in the idea itself,” which we can possibly fix upon.

“But if this be the utmost limit to which we can go in the way of definition it is obvious that we have no right to assume that the increase of any one of the ‘many’ forces concerned in the life of the body is an exaltation of the ‘vitality’ of the organism, or of the part wherein such increase of force is developed. The standard of life is a certain exact balance of various forces, developed with a certain *constant relation* to material tissue arranged in a *definite manner*; to say that we increase such life or ‘vitality’ in one part

of the organism, by destroying this balance, is a contradiction in terms."

Elsewhere (*vide* p. 281), Dr. Anstie remarks that the word life ought not to be considered as expressing something which has *relations* to the organism, but as identical with the organism itself; he regards it as incorrect to apply the latter term to the mere material tissues of the frame, and considers that the only "organism" is the general sum of tissues and of cosmic forces which the hand of creative Omnipotence binds together in the living creature. But he considers with Coleridge that (presupposing this mystery of creative Omnipotence) there is no need to make any factitious separation between the "life" of animals or plants, and that of definite forms in the "inorganic word" (so-called). With this intimation of his views as to vital action generally, the author proceeds to argue, from clinical and experimental facts, that the real work of stimulants may be divided into cases of:—I. Relief of pain. II. Removal of muscular convulsion, tremor, and spasm. III. Reduction of undue frequency of the circulation. IV. Reduction of excessive secretion. V. Removal of general debility, or of special fatigue of muscles, brain, or digestive organs. VI. Removal of delirium, or maniacal excitement, and production of healthy sleep. VII. Support of the organism in the absence of ordinary food. VIII. Local increase of nutrition *where this is deficient*. The chapter concludes with a protest against the theoretical dogmatism which would refuse to stimulants the title of special foods, and with the following proposals:—

"1. That the use of the word "stimulant" be restricted to agents which, *by their direct action*, tend to *rectify some deficient or too redundant natural action or tendency*. 2. That (doses of) agents which produce excessive and morbid action of any kind in the organism be refused the name of stimulants, even though smaller doses (of the same substances) may act in a truly stimulant manner. 3. That the word "over-stimulation" be entirely rejected from use, as unphilosophical, and a contradiction in terms."

Chapter IV. contains the "Definition of Narcosis." The author considers that the ancient use of the word by the Greeks was the true one—namely, that which applied it exclusively to *paralytic effects*. In one respect only the author desires to depart from Galen's view of this process—viz., the *production of natural sleep* he thinks is not to be regarded as a true narcotic effect at all, though the ancients, misled by its superficial resemblance to coma, naturally ranked it as such. True sleep is, on the contrary, antagonistic to the condition which favours coma, or delirium; and the only medicaments likely to favour it are *stimulants*, in the author's sense of that word. Narcosis, then, is pure paralysis: following the idea of life adopted from Coleridge, it may be called a direct interference with the machinery of individuation, through the influence of poisoned blood upon the nervous system, which, in the higher animals, forms the most important part of that machinery. According to the different modes and localities in which these interruptions of vital individuation are produced, such varying results follow as are

described in Chapter V.—viz., delirium and other mental disturbances, or sensory palsy, or heightened common sensation, or motor paralysis, or chronic or tetanic convulsion, &c.; it is shown that there is no real physiological opposition between these apparently opposed phenomena, and that in reality such agents as strychnia and chloroform act in the same *kind* of way, when given in poisonous doses at all. Special experiments are referred to in support of the argument. Chapter VI. treats of certain bodily conditions unfavourable to the production of narcosis. Chapter VII. sums up the relations which stimulation and narcotism bear to each other in the action of those substances which are capable of producing both; and shows, in fact, that in all but a few special cases, the real therapeutic effect which is produced by the administration of the so-called narcotics is a true stimulation; the dose being insufficient to produce narcosis, a state which would probably be mischievous rather than useful. The doctrine that “stimulus is followed by depressive recoil” is dismissed, as purely theoretical and without foundation in fact, and the source of the fallacy is explained. Chapter VIII. treats of the true position of the acro-narcotics, explaining that their so-called irritant effects have no relation to stimulation, but probably depend on vaso-motor paralysis. Chapter IX. consists of general conclusions from all the foregoing considerations, and especially an expansion and reinforcement of the arguments for assigning to stimulants at least a temporary place in the class of foods.

The latter part of the volume consists of a detailed experimental investigation of the properties of æther, chloroform, and alcohol, being the first instalment of the series of researches on which the author has based the opinions which have been already stated. The chief points of interest, perhaps, are the demonstration of the two different modes of death which may be induced by chloroform and æther; the experiments on the comparative effects of stimulant and narcotic doses of these substances on the convulsions of strychnia-poisoning and opium-poisoning in frogs; the experiments which appear to favour the idea that the artificial diabetes which æther and chloroform produce depends upon palsy of the sympathetic nerves in the liver; the re-investigation of the question of the much-talked-of elimination of alcohol “*en totalité et en nature*,” from a new point of view; and the collection of a number of facts showing that alcohol occasionally supports life and bodily vigour, with complete absence of common food, for long periods of time.

That this volume is an important contribution to scientific therapeutics is not to be doubted; and that it ought to be carefully studied by all who practise the art of healing is equally certain.

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*The British Pharmacopœia.* Published under the Direction of the General Council of Medical Education. London: Spottiswoode and Co. 8vo. pp. 444. 1864.

*Essentials of Materia Medica and Therapeutics.* By ALFRED BARING GARROD, M.D., F.R.S., Second Edition, revised and much enlarged. London: Walton and Maberly. 8vo. pp. 391. 1864.

*A Companion to the British Pharmacopœia, &c.* By PETER SQUIRE, F.L.S., &c. &c. London: Churchill and Sons. 8vo. pp. 208. 1864.

*The Prescriber's Analysis of the British Pharmacopœia.* By J. BIRKBECK NEVINS, M.D. London: Churchill and Sons. 12mo. pp. 264. 1864.

*The Prescriber's Companion.* By ALFRED MEADOWS, M.D., M.R.C.P., &c. &c. London: Renshaw. 12mo. pp. 152. 1864.

The British Pharmacopœia curiously illustrates the present transitional stage of therapeutics. It certainly cannot be considered a faithful catalogue of the medicinal substances in use among educated British practitioners; still less does it attempt to invite attention to the numerous remedies which are well known in foreign practice, but which have been hitherto ignored in this country. The most striking feature in the work is the extraordinary timidity with which its compilers have exercised what should surely be one of their especial functions—the recommendation to the zeal of practical inquirers of promising new remedies. The pervading look of barrenness which every one must have observed in the “British Pharmacopœia” has so important a significance as to merit special notice.

The aspect of modern therapeutic science is not unfrequently described by the phrase—“rational empiricism.” It would be well if this were a perfectly accurate description, but we take leave to say that it is decidedly *imperfect*: for, in fact, our system of applying remedies and reporting on their effects is guided by empiricism *plus* certain very definite traditions as to what the effects *ought to be*. We retain, and we are constantly hampered by, the use of certain phrases the true life and meaning of which have departed with the dogmatic physiology which gave them birth. We are ever seeking to square the observed phenomena with the characteristic effects of some one or other preconceived class of agents; and we cannot rest satisfied till we have duly ticketed each object of investigation with its proper label as a “specific” modifier of some vital function or morbid process. It is easy to recognise the influence of this tendency in the character of a large proportion of the additions which have been actually made to the list of drugs which were already



official. In the selection of "Podophyllum" only, from the large and important class of new medicines to which it belongs, we recognise the ardour of the professed crusader against obstructions of the liver, a viscus whose obedience to the suasions of mercurials is now shrewdly suspected to be less prompt than our too-confiding ancestors supposed. In the introduction of the very questionable "Digitalinum" (improperly translated by the word "Digitalia," which means something quite different) we trace the handiwork of some one possessed with an overweening desire for specific cardiac sedatives competent to suppress summarily the rebellious tumults of the most violently "excited" circulation. In like manner the introduction of lithia and its carbonate savours of a belief in specific remedies for gout, which (with all deference) we conceive to be little justified by the progress of clinical observation.

We intend no offence to the authors of these and some similar innovations when we say, that they seem to us calculated to foster a tendency to *hobbies*. Coupled with the fact that so many really important drugs are ignored, the introduction of a few (and by no means the most generally approved) of the remedies recently proposed is likely to mislead the younger students of therapeutics. The special error to which it may give rise is the belief that the all-important object of treatment is to administer a knock-down blow to a specific enemy—disease; an enemy which is thus conceived of as self-existent, and, as it were, tyrannizing over the organism. Suppression of the biliary secretion assumes the aspect of a foe who (or which?) must be encountered with "cholagogues;" cardiac tumult takes the form of a hostile force which must be routed by an array of "sedatives;" while gout appears as a skulking malignant, who (if he elude the hot pursuit of colchicum) may be expected to knock under to the *ignotum pro mirifico* of lithia.

The omission, from a pharmacopœia professing to represent the existing state of therapeutic science, of such a remedy as the *veratrum viride*, is very surprising. The slightest observation might have convinced the members of the committee that in this substance we possess a remedy of a kind which is at once difficult to meet with and highly valuable when found. In minute doses (such as a few drops of the tincture) it acts as a general stimulant, and its restorative effects are more particularly manifested in the reduction of tumultuous action of the heart. Given in excessive doses it acts as a narcotic, with especially depressing influence on the heart, but fortunately these effects are short-lived, and are easily dissipated by the administration of stimulants, should they be accidentally produced. In short, it possesses most, if not all, the advantages of digitalis, with scarcely any of the inconveniences which attend the use of that drug. We give this merely as one marked example of the careless partiality of the compilers in dealing with the subject of new remedies.

If the book is unsatisfactory as a catalogue of the therapeutic resources of modern physic, it is by the universal consent of those best qualified to speak on the subject, still less creditable as regards its treatment of chemical questions. The confidence with

which the complicated formulæ of certain organic compounds are laid down is surprising. Then, too, the processes given for the *preparation* of definite compounds are in several instances such as practically would not produce the required result, as in the notorious cases of nitrate of soda, gun-cotton, glacial acetic acid, and some others. The majority of these mistakes have arisen from the committee unwisely intruding upon the department of the manufacturing chemists. It was something more than supererogation for the compilers of the pharmacopœia to dictate the processes for the alkaloids, for it is likely to disseminate the notion that these processes are easy of execution, whereas in fact the difficulties are so great that they can only be overcome by a first-rate manufacturer, operating on as large a scale as possible. What the committee should have done with regard to these, and also with regard to what are called "druggists'" preparations (such as the scaled salts of iron) seems plain: they should have busied themselves in devising simple tests of their strength and purity, and should in every case have appended an explanation of the chemical principles on which these tests were founded. But throughout the volume we meet with no sort of explanation of the principles of chemical combinations, a kind of information which of all others would be especially valuable.

The changes in the weights are so particularly vexatious to busy medical men, that it is consolatory to remember that the effect of disregarding them in prescribing would not be very serious. No druggist would misunderstand the meaning of the symbols  $\mathfrak{zj}$  or  $\mathfrak{ss}$ . If  $\mathfrak{zj}$  of any solid were prescribed there is the possibility, certainly, that 437.5 grains, and not 480, would be dispensed; still, as we do not order such large quantities of any but the coarser remedies, so to speak, no great harm would accrue. Far more serious are some of the changes in nomenclature; for instance, we think the application of the term *hydrargyri chloridum*, hitherto used for calomel, to a dangerous poison-like corrosive sublimate, deserving of the gravest reprobation, especially as it now appears that there is much reason to doubt the scientific accuracy of the new designation.

The introduction of volumetric analysis for the purposes of testing is one real improvement. Sundry beneficial changes have been made in the method of preparing infusions; and an attempt has been made to render the more poisonous class of tinctures so far uniform in strength that the dose of each shall range from  $\mathfrak{mxxv}$  to  $\mathfrak{mxxv}$ ; even this rule, however, has been departed from in the case of *tinct. opii*, which retains its former strength, and in that of *tinct. aconiti*, which is of such a strength that  $\mathfrak{mx}$  is about the outside dose which it is desirable or safe to employ. A dose of so much as  $\mathfrak{mxx}$  of the pharmacopœial tincture of aconite might produce serious and even dangerous effects.

The general verdict on the new pharmacopœia has been that it will not do in its present shape. Accordingly a new edition is being prepared, and we trust that besides rectifying the sort of defects of which we have spoken, the committee will take the opportunity of publishing a complete posological table. The ignorance which pre-

vails on the subject of doses is, we believe, very great; and the Medical Council are surely bound to do something to lay down the limits of the safe and useful application of the various drugs.

A few words, in conclusion, on the several handbooks of *Materia Medica* which are mentioned at the head of our remarks, Dr. Garrod's very excellent and useful work has already been noticed in a former edition, and we have only now to say that it appears in a much enlarged and improved shape. Mr. Squire's volume helps to supply some of the deficiencies which are observable in the *pharmacopœia* itself: in particular it makes the tests which are given for the purity of the different substances thoroughly intelligible; and it gives the dose of each drug, so far as we could see on a pretty careful examination, with correctness. We much regret, however, that the author has confined himself to the remedies included in the *Pharmacopœia*, since his large acquaintance with the valuable novelties which have been latterly introduced into London prescribing practice would qualify him to give much useful information on this subject.

Dr. Nevins is well and favourably known as a writer on *materia medica*, and in many respects his present little brochure sustains his reputation as a useful practical worker. The difference between the British *Pharmacopœia* and the former *Pharmacopœias* of London, Dublin, and Edinburgh, are well displayed, and a good deal of useful information is given about the new official preparations, and also about various new remedies which have not been introduced into the official list. Dr. Nevins also gives a "table of doses and incompatibles" which will be of service to many. We cannot say as much for the list of "illustrative formulæ," the principle of which we consider to be decidedly objectionable. Few we imagine would approve of such a prescription as the following, which appears under the vague title of "the liver pill"—"*℞. podophylli resinæ gr. ss; fellis bovini purificati gr. ij; pulv. rhei gr. ij. M. et fiat pil.*" To be taken occasionally to promote the action of the liver;" or of the prescription of strychnia which is given under the heading of "The Nervine Tonic," and which recommends as much as  $\frac{1}{24}$  grain to be administered two or three times a day till twenty-four doses have been taken, "unless spasmodic twitchings occur earlier than this." We feel sure that Dr. Nevins will perceive the necessity of omitting or revising this portion of the work in a future edition.

Dr. Meadows' handbook is of value chiefly from the large number of remedies, many of them non-official though of well-established efficacy, which are described. In every case the dose is given, and the arrangement of all the medicines under heads corresponding to their therapeutic action is a feature which will probably make the work popular, although it may be doubted whether the principles of Pereira's classification can at the present day be considered quite satisfactory. Great pains have been taken to make everything clear and intelligible, and the author has added a useful table of poisons and their antidotes at the end of the volume.

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*On the Natural Progress of Disease.*

By Dr. J. HUGHES BENNETT, Professors of the Institutes of Medicine, &c., in the University of Edinburgh.

(*Lancet*, December 12, 1863.)

The following remarks occur in Dr. Bennett's twelfth and concluding lecture on Molecular Physiology, Pathology, and Therapeutics, and their application to the treatment of disease :—

"It may be laid down as a general law, that diseases are seldom stationary, and that their tendency is to get better or to get worse. While many disorders, from their trifling character, or in consequence of being well known, are at once recognised as capable of disappearing spontaneously, others have been supposed actually to have a destructive or injurious tendency, or to be necessarily fatal. Now the study of disease in modern times has led to a great change in our views on these heads. For example, it was formerly supposed that acute inflammations had, for the most part, a destructive tendency ; that suppuration was a great evil, and always required the interference of the surgeon, because an abscess, if so deep-seated that it could not be reached with the knife, seldom got well, and if it burst into an internal cavity caused death. Again, if inflammation visited the skin, the mucous or serous membranes, or the internal organs, the great object was to prevent it spreading by using the most violent remedies, such as bloodletting, purging, antimony, and low diet, which received the name of antiphlogistics. On the other hand, a tubercular disease, especially when it attacked the lung, was supposed to be almost uniformly fatal, and altogether beyond the reach of art.

"Now these conclusions are erroneous. We have previously seen that an analeptic treatment frequently cures tubercular disease ; while the antiphlogistic treatment, formerly supposed capable of cutting short inflammations, not only fails to do so, but constitutes a most fatal practice. Much of this error depended on unacquaintance with the natural progress of disease. Most diseases in vigorous constitutions, so far from having a tendency to destroy, have a marked tendency to get well of themselves ; whilst instead of loss of blood, weakness, and prostration being remedies, they are the sources of danger and the chief causes of the fatal result.

"Again, malignant growths were supposed to be seated in the blood—an idea which rendered operating useless ; whilst innocent growths were supposed to be capable of going away of themselves, or to be the only ones admitting of surgical interference. In this, also, a great change in opinion has been effected ; so that cancers, like other growths, are now known to have been successfully extirpated.

"But further, how is it possible to know the effect of any remedy whatever, unless it be ascertained, in the first instance, not only what is the natural termination, but also the natural duration, of a disease ? We know that small-pox, scarlatina, measles, and similar

affections, run a certain course, and no one thinks of cutting them short, or proposes different kinds of remedies for that purpose. The real principle of treatment is to conduct them to a favourable termination. Should not the same rule apply to many other diseases?

"Some years ago Dr. Hamilton Bell stated that fifteen drops of the tincture of muriate of iron was a valuable remedy in erysipelas, but *how* valuable was not shown, because it was not attempted to be proved that the remedy diminished the mortality, or shortened the progress of the disease. Notwithstanding, this remedy was at once largely given, and, it was said, with universally good results. I remember accompanying M. Louis, many years ago, in his visit in the Hôtel Dieu, and was much struck by seeing many cases there of severe erysipelas of the scalp. On asking him what treatment he pursued, he answered, none at all, because they all rapidly got well of themselves in healthy constitutions. And, in fact, on following these cases from day to day I found that they all did so get well. I need scarcely say that in the Royal Infirmary I have seen many severe cases of erysipelas. I have never given the tincture of muriate of iron, or anything but good diet, with lotions of acetate of lead, flour or oil locally to alleviate irritation, and I have not had a fatal case. Nor has it ever appeared to me that the tincture of muriate of iron could have shortened the progress of the disease. I need scarcely say that any remedy might easily obtain a great reputation if given in diseases that almost always got well of themselves.

"Again, look at rheumatism. Every drug and every system of treatment has been tried. In acute cases, bleeding, purging, antimony, mercury, the whole class of sedatives and narcotics, stimulants, quinine, and lemon-juice, large doses of alkalies, numerous specifics, hot baths, cold baths, dry frictions, and moist applications in every form. Yet under every one of these remedies, however opposite in their nature, notable cures have been performed. Is not the conclusion obvious, that the disease follows a certain progress, and that although many of these remedies may retard convalescence, it has yet to be proved which, if any, shorten its duration, even one hour?

"One method of prosecuting therapeutics, therefore, is to investigate—1st, How long a disease naturally takes to get well of itself under favourable circumstances. 2ndly, What is its progress under unfavourable circumstances; and lastly, this being known, how far remedies are capable of shortening its duration. If every young practitioner would dedicate his life to the careful elucidation of the natural progress of only one disease, he would do more for medical practice than has been accomplished by centuries of empirical trials of remedies."

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*On Transfusion of Blood.*

By M. LONGET.

*(British Medical Journal, September 12, 1864.)*

Some remarkable experiments have been lately made by M. Longet with a new apparatus for transfusion of blood. They were perfectly successful. A dog, weighing 11 kilos. 750 grammes, was fixed by the side of a dog which was to supply the blood. The femoral artery of the first dog was opened, and in about fifteen minutes he lost 815 grammes of blood; that is, all the blood which would flow out. The animal became anæmic, and had three syncope. He was recovered from two of them by cold water affusions, but not from the third attack. He was now completely exsanguineous; his mucous membranes had lost their colour; breathing had ceased; convulsions came on; and every one thought the animal was dead. In about eighty seconds after the occurrence of this apparent death, from 80 to 90 grammes of blood were thrown into his veins; and then the respiration was gradually re-established. The transfusion was continued up to 125 grammes; and, after ten minutes, 125 grammes were injected. So that the dog, which had lost 815 grammes, received 250 grammes of blood. The animal gradually recovered; and, after a short interval, he ran round the room. Eight days afterwards, the dog was quite well, and was used for a different experiment. The conclusions drawn from this fact are: that life is not immediately destroyed even by the most severe hæmorrhages; and that, by restoration of the blood, life may be preserved.

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*Evidence against the Internal Use of Mercury in Syphilis and other Diseases.*

By Dr. CHARLES DRYSDALE.

*(Medical Times and Gazette, March 6, 1864.)*

In this paper, which was read at a recent meeting of the Harveian Society, Dr. Drysdale first points out the difficulty there is in proving any drug to be a specific. We can (he observes) understand the action of Epsom salts or chloroform, because we know how they act upon human beings in health; but, with the exception of quinine in ague, we have perhaps no undisputed antidote for any diseased condition. He quotes from Mr. J. S. Mill to show how difficult it is to treat disease experimentally. Skey, Desruelles, Copland, &c., had shown that mercury has the power of causing caries of bones and complete degradation of the body, both in human beings and in dogs. Of all the properties assigned to mercury, the only one which it undoubtedly possesses is that of acting as a purge, and, from its bad effects upon some individuals, it is evidently a bad purge. Mercury is called a cholagogue, but recent experiments

on dogs have proved that calomel actually diminishes the biliary secretion. The use of calomel and opium is now abandoned by the best surgeons in all traumatic cases and in peritonitis. In iritis, mercury has been shown to be useless, and probably injurious, by Hugh Carmichael, Dr. Williams, of Boston (who treated sixty-four cases of iritis without it, sixty of which recovered perfectly), by Dr. Hughes Bennett, and by Mr. Zachariah Laurence. Mr. Acton, too, confesses that he thinks that syphilitic iritis is frequently produced by courses of mercury. As to pericarditis, forty cases, published by Dr. Taylor, of University College, have proved the evils of salivation, and its inutility. In acute hydrocephalus, again, there is reason to believe that the great mortality of the complaint is partly to be attributed to the mercury and bleeding employed. As to mercury in bronchitis, pneumonia, and pleurisy, there have lately been 150 cases of uncomplicated pneumonia consecutively treated in Edinburgh by Professor Hughes Bennett without mercury or bleeding, all of which had recovered. Dr. Walshe holds that mercury does harm, not good, in inflammatory complaints; and Dr. Hughes Bennett considers mercury always to be an evil, and that it should never be administered in any disease. Passing on to the citadel of mercurialists—syphilis—Dr. Drysdale agrees with Syme, Ricord, &c., that ulcers on the genitalia and eruptions have always existed, although Celsus was unaware of their sequence. He quotes Dr. William Fergusson's works of 1812 and 1846, showing how many thousands in the British army have recovered from primaries and secondaries without ever having taken a particle of mercury; and how dreadfully the army suffered in Portugal from the effects of mercurial inunction. Next, from Mr. Guthrie, late President of the College of Surgeons, to show that all ulcers of the organs of generation recover without mercury. Of 407 cases treated by Dr. Hennen, iritis occurred in 1; exostosis in 1; and no case of nasal bone affection occurred without mercury. In 1818, and subsequently, Dr. John Thompson had in Edinburgh treated a large number of cases of venereal disease among the troops, and the only symptoms observed were sore throat and eruptions, slight, though somewhat tedious, and all recovering perfectly without mercury. He has not had any deep ulcers of the skin, or bone disease, as when mercury was used. Dr. Desruelles has, in the Val de Grace Hospital, treated a large number of soldiers from the year 1819 to 1841 without mercury with the best results. He mentions that up to the year 1841 upwards of 300,000 cases so treated in England, France, Germany, and Sweden had been recorded. Dr. Fricke treated, in the Hamburg Hospital, from 1824 up to 1844, 15,000 cases of all kinds of venereal disease without mercury. In his work, published in 1828, he says of the cases therein mentioned, that iritis had not occurred, nor any case of bone disease, or deep ulcers of the skin, which affections were very common when mercury was used. His treatment consisted of cleanliness, low diet, and external applications, with Epsom salts as a purge. Dr. Drysdale mentions the large experience of the Swedish government, where 46,687 cases were recorded, and where non-mercurial treatment has proved far the

more successful. Five thousand two hundred and seventy-one cases recorded by the French Council of Health shows a result of one or two cases of exostosis, no caries. M. Ricord has founded a new school, which gives in indurated sores a six months' course of a daily dose of mercury, followed by three months of iodide of potassium, to act as an antidote to the poison. Dr. Drysdale quotes from Mr. Syme how "a fearful system has recently been founded on the ruins of the mercurial delusion." Mr. Syme says that the natural history of syphilis, where treated by hygiene and external applications, without mercury, is that of a very slight disease; and Professor Hughes Bennett says:—"The idea that mercury is an antidote for the syphilitic poison, and the incalculable mischief it has caused, will constitute a curious episode in the history of medicine at some future day." Mr. Weeden Cooke and Mr. Spencer Wells both attribute the bad tertiary effects in syphilis to the use of mercury—not to the natural disease. Professor Boekh's (of Christiana) experiments, published in 1863, show that 1008 cases of primary disease and secondaries, treated with calomel and iodide of mercury, required, on an average, sixty-two days for treatment; whilst 611 similar cases, treated with Epsom salts and external applications, required only thirty-eight days. Also, when primary sores were treated with mercury, 24 per cent. had secondaries, and, when treated without mercury, 14 per cent. only. The United States Army direction has recently forbidden the administration of calomel, which was (Dr. Drysdale remarks) the result of their conviction of its inutility; and Dr. Diday is now treating most cases of secondary syphilis without mercury, and has recorded the dreadful effects of M. Ricord's plan of treatment in causing mania, apoplexy, dyspepsia, and frequent salivation. MM. Cullerier, Fournier, and others in Paris, with whom he has conversed, have abandoned mercury in treating all primary sores, and await the eruption, which (Dr. Drysdale says) he hopes is but the prelude to giving up the drug altogether, and returning to the rational, or non-specific treatment, which is so superior in its results. The author says, of infantile syphilis—(1), it is very frequently the result of mercurio-syphilis in the parents; (2) it is injured, instead of benefited, by mercury, as recently proved by Mr. Allingham and himself.

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*Iodine, its Actions, Normal and Abnormal, upon the Human Body.*

By Drs. SCHNELLER and HERMANN.

(*Canstatt's Jahresbericht*; and *Dublin Medical Press*, July 8, 1863.)

Dr. Schneller reports the results of his own experience, which extends over a period of twenty years. In his practice he employed iodine and its preparations and certain mineral waters containing it; and his conclusions in reference to its effects are the following:—(a) The constitutional effects of iodine, described by Rilliet under the



name of iodismus, offers, in its symptoms, which have been accurately described and grouped together by Rilliet, some new features, though its general symptoms have long been recognised as consequences of the use of iodine. (b) Iodismus, or anglicised *iodism*, only occurs in exceedingly rare cases. (c) Medium, as well as very small doses of the agent, give rise to iodism more speedily than larger ones. (d) Old, debilitated persons, and those of an irritable habit, who have manifested symptoms of scrofula, seem to possess, for these reasons, a greater susceptibility to iodine than others. (e) The use of this agent, in persons of the characteristics just mentioned, requires, on this account, more precaution than has hitherto been exercised. (f) The constancy of the occurrence of iodism, as set forth by Rilliet, is not so free from doubt, and hence not of so convincing a character as should induce us to use iodine less frequently than has hitherto been done.

Somewhat in opposition to these views, it is interesting to note the experience of Dr. Jos. Hermann, which bears much analogy to what has been noticed in Paris and London: Hermann's observations led him to adopt the notion of the non-existence of constitutional symptoms resulting from the use of iodine. He treated annually, in the department of the Vienna Hospital, devoted to cutaneous and syphilitic diseases, about one thousand patients. His plan of treatment was as follows:—In its incipient stage, syphilis was treated merely as a local affection, without any internal medication; the secondary and tertiary forms of this disease—according to Hermann, sequelæ of mercurial treatment—were treated entirely by the use of iodide of potassium, iodide of sodium, and iodurated cod-liver oil. Also, as external remedies, were employed the various compounds of iodine, as well as the tinctura iodini and iodurated glycerine, no mercurials being used: consequently, since more than one-third of the cases had, at the period of their admission, been affected for some time, and been treated with mercury, there were, annually, from three to four hundred patients treated with iodine. Under this mode of treatment the following phenomena were present:—

1. The most ordinary physiological change which took place in the organism was in regard to the urine. This secretion was increased in quantity, and in case metallic poisoning presents itself, the urine is so changed in quality that its specific gravity sinks to 1005, and even as low as 1002; its solid contents become less in amount, the urea, sulphates, earthy and alkaline phosphates are reduced to amounts so small as to be scarcely appreciable. At the same time the water and the chlorides are increased to abnormal amounts; in this attenuated urine there exist traces of albumen, carbonate of ammonia, and other unusual agents. The augmented urinary secretion, as well as the qualitative changes which occur in it, that have been mentioned, are the most constant phenomena following the use of iodine—they occur in near eighty per cent. of the cases; they continue during a variable period, which is influenced by the person's constitution—the time varying from ten to fifty days, or even more; the increase in quantity disappears as soon

as the urine returns to its normal constitution again; sometimes, also, the supervention of some other symptom, as perspiration, diarrhoea, salivation, occurring under the form of a crisis, is followed by a diminished flow of urine, and a return to its normal constitution. Under the circumstances mentioned, the presence of albumen in the urine is almost a prognostic sign that mercury may be shown by electrolysis.

2. In about ten per cent. of the cases in which mercury had been administered, and to an extent which was detrimental to the system—inducing a class of symptoms to which Hermann gave the title of *hydrargyrosis*—in such cases of syphilis the administration of iodine was followed by a profuse secretion of saliva, amounting often to one pound in twenty-four hours. The salivation thus induced by the use of iodine is distinguished from mercurial ptyalism in this, that, in the former case, there is no irritation or ulceration of the mouth or gums, no swelling of the mucous membrane of the oral cavity, and in the majority of cases, no soreness of the salivary glands, and no unpleasant odour from the mouth; in many cases, indeed, in which these symptoms had been brought about by the use of mercury, they rapidly disappeared under the use of iodine. The author, in all such cases, in which salivation has supervened upon the use of iodine, has found, on examination, that mercury was contained in the saliva, and hence he regards this as positive evidence that the salivation arose from the mercury and not from the iodine.

3. In about four per cent. of the cases there followed the administration of iodine a profuse perspiration, which did not weaken the patient: the author regards this perspiration as critical in character, since it arose under the exclusive use of iodine alone, no sudorific having been administered; he conjectures that mercury is present in this cutaneous discharge. As was the fact in the case of the occurrence of salivation, so after the supervention of profuse perspiration, the recovery was rapid and permanent.

4. In many cases, after the internal use of iodine, during a period varying from twenty to fifty days, there appeared an exanthema of the following characteristics. The original form appeared as small, round, papulæ—in some cases, instead of the papulæ, small vesicles or pustules were present; these were grouped together in patches, disposed at greater or less intervals, which did not become confluent; this eruption, which was attended by no burning nor itching, ran through its various phases in from five to eight days, and then disappeared without leaving any scar or discoloration. It either presents itself in isolated portions of the body, as on the face, forehead, breast, abdomen, back, or extremities; or it may occur simultaneously in various parts of the body, or, indeed, the entire surface may be affected with it, including even the scalp itself: the general eruption is not accompanied by an universal reaction, but, for the most part, occurs irregularly, so that, in one portion of the body, it has already vanished, while, in other parts, the erosion still shows itself. The colour of the spots, on the margin of the vesicles relatively to that of the pustules, is rose-red, in case the mercurial

poisoning has been of small extent or is entirely absent; the tinting becomes of a more intense red hue, or even of a deep copper colour, in case there is a high grade of mercurial poisoning. Also, in those instances where the iodine eruption occurs in conjunction with some other one, as roseola syphilitica or with papulæ, pustulæ, or furunculi, which attend mercurial blood poisoning, then the exanthema, which arises from iodine, and which consists of fresh spots or vesicles, always appears in the intervening interstices, and again disappears—while the roseola, the papulæ, &c., run through their various modifications. The occurrence of the eruption from iodine has neither a pathological nor a prognostic significance, and in no wise indicates that the system is surcharged with iodine and that the agent should be suspended. This phenomenon comes and goes, even during the constant use of iodine; it appears and disappears during a protracted use of iodine.

5. The scars of chancres, which have long since arisen, even months or years ago, after the use of iodine, open again; the scars may actually be seen undergoing disintegration and solution of their texture, and thus to present fresh excoriations and even ulcers; these excoriations or ulcers present a great resemblance to the primary chancre, yet do not generate matter which may be inoculated or propagated by contact.—[I would call special attention to this fact, as it is, no doubt, what has fallen under the observation of every one who has treated syphilitic patients with the compounds of iodine; six weeks since, such an instance came under my notice, in which, during the use of iodine, the cicatrix of an old chancre opened, presenting all the characteristics of a primary syphilitic ulcer—and what was still more remarkable, a bubo soon followed this pseudo-chancere. From my acquaintance with the patient I was well convinced that he did not deceive me in regard to this chancre occurring *sponte sua*, as he belonged to that class of men who pride themselves upon the frequency of their venereal attacks—regarding each one as a bright jewel in their life-experience. The bubo in this case was caused to disappear by active counter-irritation, without reaching the point of suppuration.—Ed. D. M. P.] The author states that he has seen this event only in the secondary and tertiary forms of syphilis, or, according to his ideas, in the chronic forms of hydrargyrosis. He explains this phenomenon in this wise, that the cicatrices remain dormant so long as the mercurial blood-poisoning is not manifest, or, in case it is manifest, it exhausts its injurious effects in the formation and development of other morbid products; for example, when it is expended upon the mucous membranes, or upon the glandular or osseous systems. If now the iodine be given, there arises from the increased activity of the vital process, an augmentation of the *vis medicatrix naturæ*, under the agency of which there is a disappearance of those cicatrices which have arisen under the employment of mercury: in order, however, to effect this, the unhealthy scars, which have arisen from the use of mercury, must first be broken down by an ulcerative process, which, after the purification of the blood has been completed, heal up and remain radically cured. Phenomena similar to these have been observed by

Dr. Englemann and other physicians, after the use of the ioduretted water of the mineral waters of Kruesnach.

6. In a few cases, perhaps two per cent., there arose, under the use of iodine, a diarrhœa, which lasted several days, or even some weeks; this diarrhœa, though of a very free character, was unattended with much pain or exhaustion of the body; during its continuance, the external manifestations of hydrargyrosis disappeared before the cessation of the use of the medicine, the diarrhœa also ceased; or, in case the remedy was continued, the diarrhœa in no wise assumed a dangerous character. The author regards this intestinal discharge of a critical character, and especially so when it indicates an elimination of mercury.

7. In near one per cent. of the cases in which iodine was given, the patient's body emitted an unpleasant odour; in other cases, there were objective and subjective indications that the agent had been taken, appreciable in the breath and cutaneous transpiration.

The foregoing phenomena presented themselves in the patient in from eighty to ninety days, under the administration of the iodide of potassium, in from ten to thirty grains given daily; or, of the pure iodine, in doses of two grains daily.

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### *Assimilation of Lactate of Iron, and its Superiority over the other Chalybeates in Reference to Digestion.*

By Dr. A. CORDIER.

(*Dublin Medical Press*, March 4, 1863.)

In order to appreciate the different preparations of iron, their action on the gastric juice has of late been the subject of frequent consideration, and rightly so, as it was to be determined whether the gastric juice, by dissolving the chalybeates or combining with them, would not be found wanting in its proper place and time, the act of digestion. Meanwhile we have, like the majority of the profession, continued to prescribe the lactate of iron as the safest preparation in point of digestion.

Indeed, since 1839, when MM. Gelis and Conté presented their first paper to the Imperial Academy of Medicine, the lactate of iron has continually risen in the favour of the profession, and as clinical observation has more than sufficiently proved its eminent value, we feel much satisfaction in supporting this opinion by some new physiological facts and experiments.

That the lactate of iron is the only chalybeate which can be prepared in the human body is easily proved, by digesting for twelve hours at a temperature of 104° some iron filings with distilled water and calf's rennet. Hydrogen is disengaged and lactate of iron formed, because lactate acid is contained in the gastric juice, and in fact is the acid which imparts to the same its acidity. This has been proved to evidence by MM. Claude Bernard, Barreswill, Chevreul, Leuret, Lassaigne, and others.

*Besides, M. Bernard has shown that the lactate of iron can be injected into the veins in a large quantity without producing any accidents—an experiment speaking highly in favour of MM. Gelis and Conté's preparation.—(Archives de Médecine, vol. xvi. p. 87.)*

The lactate of iron combines readily with the albuminous fluids, and loses the property of being precipitated. (Mitscherlich, Bernard.) Those combinations are readily assimilated without fatiguing the stomach. Unlike other chalybeates the lactate of iron, far from impeding digestion and weakening the appetite, rather strengthens them, as it has also been stated by M. Bouillaud in his report on the lactate of iron to the Imperial Academy of Medicine. MM. Fouquier and Hardy, in a note annexed to this report, say:—"We have several times prescribed the pastils of lactate of iron in cases of chlorosis with amenorrhœa, and after three or four days there was always such an increase of appetite that the patients complained of the insufficiency of their diet," &c. &c. Experience has now sufficiently proved not only the excellence of MM. Gelis and Conté's pastils in all cases where ferruginous preparations are required, but also their superiority over other preparations where a weak or diseased stomach has to be taken into consideration. The reason of this is partly intelligible from the above remarks; but there are other proofs which we will presently consider.

In experimenting on the digestibility of medicines, M. Quevenne has found that a dose of thirty grains of reduced iron, or of the sesquioxide, even when taken at meals, produces diarrhœa and vomiting, while the lactate administered eight times, at a dose of fifteen to thirty grains, produces no inconvenience; thirty grains only appeared to affect the animals experimented upon. This difference appears to be due to the stomach having in the first case to dissolve and transform into lactates the above-named preparations of iron, while in the latter case it receives the lactate already formed. If the stomach of healthy animals is differently affected, how much more will this be in the case of a reconvalescent or chlorotic patient?

Recent experiments have given new support to the view which we hold of the preference to be given to the lactate over other less soluble preparations. M. Felix Boudet undertook a series of experiments to ascertain whether the salts of iron which are precipitated on contact with the gastric juice require for their absorption any considerable quantity of this valuable and important liquid. (Report on the Therapeutic Use of Pyrophosphate of Iron, read before the Imperial Academy of Medicine, July 13th, 1858, &c. &c.) He says:—"My experiments were made with the assistance of MM. Roubiquet, Corvisart, and Boudault, who themselves are occupied with a general work on the relation and reaction between the gastric juice and a large number of drugs."

One drachm of fibrin and two and a half of fresh gastric juice of a dog mixed and kept for six hours at a temperature of 104°; the fibrin is dissolved and completely transformed into albuminose. But if one introduces at the same time any substance antagonistic to the action of the gastric juice, the fibrin is not or only partially digested.

In order to ascertain the degree of digestion, MM. Boudault and Corvisart apply three consecutive tests:—1st, Boiling; 2nd, Barreswill's liquor; 3rd, Glucose added to Barreswill's liquor. If digestion has been completed, the obtained produce does not coagulate at  $212^{\circ}$ , turns into deep violet when boiled with Barreswill's liquor, and prevents this liquor from being reduced by glucose.

But if digestion has not taken place, the obtained produce is not turned into violet by Barreswill's liquor, and glucose readily reduces the liquor.

In case of incomplete digestion, the above tests are less marked one way or the other. These tests have been applied by me to different compounds of iron, of which in each case I employed so much as to represent three-fourths of a grain of metallic iron. The result has been—*with lactate of iron*, DIGESTION COMPLETE; consequently no modification of the action of the gastric juice by its presence. *With tartrate of iron and potash, citrate of iron, pyrophosphate of ammonia*, DIGESTION NULL; *with three-twentieth grain of reduced iron*, COMPLETE; with six-twentieth, INCOMPLETE DIGESTION.

Experiments with the pyrophosphates of iron and soda appear to have an equally paralysing effect on the gastric juice. The same results had been obtained by MM. Boudault and Corvisart in previous experiments.

So besides clinical observation, chemistry and physiology have testified to the superiority of the lactate of iron, which has since a long time, and mainly through the pastils of MM. Gelis and Conté, proved itself to be the most digestible of all ferruginous preparations.

### *Effects of the Preparations of Iron on the Tissue-change.*

By Dr. PAKROWSKY, of St. Petersburgh.

(*Virchow's Archiv*, xxii. 1861; and *Cincinnati Lancet and Observer*, July, 1862.)

Dr. Pakrowsky has directed particular attention to the effects of iron on the tissue change in patients at the hospitals at St. Petersburgh, who were taking that article for different diseases. He measured daily in all the patients the temperature of the body, the amount of the food consumed, the amount of the excrements, and of the urine, with the specific gravity of the latter, and the amount of chlorides and urea it contained.

The following are his conclusions:—

1. The temperature of the body is positively heightened by the use of these preparations.
2. This increase results in some cases very soon; in one case it occurred after five hours; in others slower, and in one case a long interval and after a large dose.
3. The temperature, the morbidly lowered as well as normal one, is increased; and if it ceases to rise after reaching a certain height, having taken a certain quantity of the iron, the temperature will rise more by increase of the dose.

4. Several days after using it the pulse rises also, although not in all cases.

5. Very soon, and consequent upon the increase of the temperature, the daily amount of urea in the urine increases.

6. The use of iron increases the weight of the body.

7. Every preparation of iron produces the same effect, and a change in the different preparations in the same patient does not alter the result.

8. The diuretic effect of citrate of iron was very distinct in two cases, but was wanting in three under the same conditions.

9. In all cases where iron was used no constipation of the bowels took place, except a slight one after iodide and lactate of iron. It was borne well, and in large doses, by the digestive apparatus (nine grains pyrophosphate of iron, and fifteen grains ferrum hydrogenio reductum).

10. Dropsical transudations in the subcutaneous cellular tissue were resorbed by the use of iron, even in patients with insufficiency of the mitral valve, and reappeared after stopping with the remedy.

11. The increase of the heart's impulse and the dyspnoea in patients with organic cardiac diseases disappeared even in cases in which digitalis had done nothing.

12. After the normal temperature of the body had been raised by the use of iron, it lasted a considerable time after stopping with its use before returning to its normal condition; whilst the morbid lowered temperature rose quickly by the use of iron, it fell just as quickly by stopping with its use—at least, where the other pathological symptoms continued, and where consequently the cause of the low temperature was not cured.

Referring to these facts, the Doctor lays down the following maxims: Taking into consideration that the temperature of the body and the quantity of urea in the urine is increased by the use of iron, that the cedematous condition disappeared and the weight of the body is augmented, we are fully justified in ascribing to the iron a nutritive power. The increase of temperature indicates a stronger tissue-change, for this is constant, and accompanied by other symptoms indicating a heightened nutrition. How this is brought about it is difficult to say. Increase of the blood quantum or of the blood corpuscles cannot be the cause; both increase very slowly, whilst the change of tissue augments very quickly. Neither can the increase of the pulse explain the elevated temperature, as the first succeeds the latter. The respiration is not altered by the iron, hence it cannot have an influence upon the temperature.

According to Dr. Pakrowsky, we have, therefore, to look for the effect of iron in the finest arterial and capillary system, one of the most important places of nutrition, and the growth of the tissue and organs, and so much more, as the disappearance of dropsical transudations in the subcutaneous cellular tissue, after the use of iron, points to that system. The most probable is the supposition that the iron acts upon the contractile elements of the finest arterial branches, which must have, without doubt, a high and important influence upon the capillary circulation. The iron must consequently alter the condi-

tions of the diffusion of the elements composing the tissue and organs. Only in this way does it seem possible to explain the quick effect of iron upon nutrition and upon the resorption and the cedematous transudations.

### *On the Action of Digitalis.*

By Dr. FULLER, Physician to St. George's Hospital, &c.

(*Diseases of the Chest.* London: Churchill. 1864. 8vo.)

In his recent elaborate and excellent work on "Diseases of the Chest," Dr. Fuller asserts that the general notion that digitalis exercises a depressing influence over the action of the heart, and in that way leads to accumulation and coagulation of the blood in its cavities, if not to actual paralysis of its muscular structure, is erroneous. On the contrary, he affirms that digitalis stimulates the muscular fibres of the heart, and augments the contractility of the capillaries; that when it kills, it is not by paralysis, but by tonic contraction and spasm of the heart; that, such being the case, it is a valuable remedy in dilatation, and dangerous only when administered in hypertrophy. The grounds given by Dr. Fuller for these opinions are these—(p. 592):

"1st. During many years I have observed that the cases of heart disease most benefited by digitalis have been those in which the heart has been weak and dilated, and the pulse feeble and irregular. In these the pulse has become stronger and steadier, and less frequent under its action.

"2nd. In the only cases in which I have known death to occur suddenly during the administration of digitalis, the heart has been hypertrophied and firmly contracted. This may have been a coincidence, but, viewed in connection with the results of experiments to which I shall presently refer, it is, at least, a suspicious fact.

"3rd. Dr. Dickenson has pointed out (*Med.-Chir. Trans.*, vol. xxxix.), and I have repeatedly verified his observations, that digitalis, if given in full doses, induces violent uterine contraction, and checks uterine hæmorrhage; and, inasmuch as its action in staying menorrhagia and uterine hæmorrhage is permanent, it seems fair to conclude that it gives tone to the capillaries, and increases their contractility.

"4th. This view is borne out by what I have long since observed relative to its action in arresting hæmoptysis—viz., that, whilst effecting the object required, it does not weaken but rather increases the force of the pulse, though it lessens its frequency.

"5th. When patients die of delirium tremens, the pulse is usually rapid and fluttering before death, and the heart is found weak, flaccid, and distended with blood afterwards. These are just the cases in which, on the commonly received doctrines as to the action of digitalis, the drug ought necessarily to prove fatal; and yet modern experience has shown that in these cases it is tolerated, even



in excessive doses. My impression is, that its remedial action in these cases depends on its stimulating the heart, subduing its irritability, and increasing the tonicity and contractility of the heart and capillaries, so that the brain is better supplied with blood, and the effusion of its more fluid parts—which gives rise to the 'wet brains' of habitual drunkards—is avoided.

"6th. It has been proved by experiments on animals (Dr. H. Jones) that when death is induced by digitalis, the heart is not flaccid and distended with blood, as is commonly supposed, but, on the contrary, empty, contracted to the utmost, and in a state of tonic spasm. All these facts confirm my view as to the action of digitalis; and if it is correct, its practical importance in relation to the treatment of cardiac dilatation can hardly be over-estimated."

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*On the Action of Tartarized Antimony on the Heart.*

By Professor AKERMANN, of Bostock.

(*Virchow's Archiv*, xxv. 1862; and *British and Foreign Medico-Chirurgical Review*, July, 1863.)

By means of tartarized antimony we are enabled to induce different degrees of collapse by varying doses of the drug. Slight appearances of collapse accompany the first excitement of nausea, and they increase as the nausea increases. The frequency of the pulse also increases until immediately before vomiting, while its force progressively diminishes. The temperature of the peripheral parts falls in proportion as the nausea and frequency of the pulse increase. After the act of vomiting, or when this does not ensue, after the termination of the feeling of nausea, appearances of reaction begin. Injections of tartarized antimony into the blood-vessels in dogs produce results similar to those observed in man. Professor Akermann always observed, after injection of tartarized antimony, a diminution of the force of the blood in the aorta, and this took place whether the frequency of the pulse increased or diminished, but was greater with a slow pulse, and was greatest immediately before death. The operation of tartarized antimony may be explained by reference to the experiments performed. As this drug diminishes the arterial tension and the force of the heart's movements, it retards the circulation of the blood, and hence induces a decrease of animal heat, which becomes lower in proportion to its longer and more powerful operation. This lowering of the temperature appears to be occasionally interrupted by its elevation, and the latter seems to be dependent on the contemporaneous acceleration of the breath-movements. Professor Akermann does not deny that the vomiting and purging may also hasten the cooling of the body, but he considers that these circumstances are not necessary conditions.

The irritability of the heart is perceptibly weakened by the use of tartarized antimony. In dogs killed by the injection of this salt into an artery, the irritability of the heart examined immediately

after death was remarkably diminished, and sometimes altogether extinguished. The hearts of frogs placed in a solution of tartarized antimony lost their irritability much sooner than in pure water. The diminution of muscular power was also very remarkable. The breath-movements were sometimes calm, sometimes hurried, but for the most part very slow, with hasty, forced inspiration, and very long expiration, appearances which Professor Akermann attributes partly to the congestion of the venous system and the deficient combustion, and partly to a directly debilitating effect of the tartarized antimony on the organs of expiration. The short and spasmodic inspirations which for the most part precede the long expirations, appear to be determined by a similar spasmodic contraction of the diaphragm as is seen before the act of vomiting.

The post-mortem examination of animals poisoned by tartarized antimony showed a general congestion of the whole venous system, the *venæ cavæ* and the portal vein being especially filled with dark blood; the liver, spleen, and kidneys excessively congested with blood, sometimes with extravasation; the lungs not, as Magendie maintains, changed in structure and partly hepatized, but for the most part normal, or at most showing some emphysema of the margins and small ecchymoses. The large intestine was regularly contracted both in length and breadth, and there were some ecchymoses on the folds of the mucous membrane.

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### *Report of an Experiment with Cannabis Indica.*

By Dr. W. WATSON CAMPBELL.

(*Medical Times and Gazette*, August 6, 1863.)

"About a quarter to seven o'clock one evening in the month of February, 1862," writes Dr. Campbell, "I took about three grains of the extract in the absence of a friend with whom I was staying in Edinburgh, and whose return I did not expect for at least an hour, hoping to ascertain whether, ignorant of what I had taken, he would be able to notice anything peculiar in my appearance or conduct. My friend came home about a quarter to eight, and after waiting until five minutes past eight without any effect of the dose being manifested, I told him what I had taken, and how much, and at the same time again took a dose of the extract equal to the first, requesting him to make the most of the experiment that he could by observing the effects of the drug on my pupils, pulse, and specially in regard to its supposed anæsthetic property. At my request he then commenced reading aloud to me from a work on surgery, and meanwhile we dismissed thought of the experiment or rather awaited its manifestations.

"At about a quarter to nine o'clock I experienced a feeling of heaviness deep over the supra-orbital arches, and the gas-light in the room seemed less brilliant than usual, which led me to suspect that my pupils were somewhat contracted; this my friend, Dr. Lightbody said was the case, but only to a slight extent. From this

time onward I felt a gradually increasing inability to remember what was read to me—the words just uttered and the meaning they conveyed seemed both to die away in a distance, notwithstanding that I made the most violent efforts to retain both. Strange as it may appear, at this time I could remember quite easily what was said in conversation, but what was read completely baffled me. At last I asked Dr. Lightbody so often to recommence a paragraph, so that I might recollect something of the subject about which he read, that he put aside the book, declaring it was of no use. This excited a laugh—with me, indeed, an uncalled-for burst of laughter, which was not altogether involuntary, nor yet to any considerable degree voluntary—in character it resembled singultus.

“At half-past nine I tried to read aloud from a note-book, and on stooping forward for this purpose, found that I could see only one or two words (the rest appeared a mere mass of confusion), and after uttering them consciousness left me for a few moments only, the suddenness of which, both in coming and going, resembled the *petit mal*. The note-book was put aside.

“About ten we had coffee, after which Dr. Lightbody engaged in study, and left me to my own reflections. I had said to him that I would occasionally endeavour to describe my feelings and think aloud as much or as clearly as I could, in the event of any sudden or amusing train of thought occurring, so that I might afterwards be able with his help to connect the ideas which passed through my mind and the incidents with which they might have been associated. Fits of laughter recurred, and increased in frequency. I became exceedingly loquacious, and in vain endeavoured to tell Dr. Lightbody in clear and decided terms that I would not impose on his credulity—that I was not seeking to hoax him, as he evidently suspected I was doing. The most trifling circumstance sometimes suggested a train of ideas, which it was impossible for me to follow out; another train would intersect it, very different from the first, the decided foolishness of many provoking great laughter. It seems that during the time that had elapsed since taking coffee I had been disposed to humorous mischief.

“At a quarter before eleven I had a peculiar feeling of duality of being—it was as if another soul occupied my body, and my own had been displaced, but still lingered near. This peculiar feeling I vainly endeavoured to describe, and, what was most tantalizing, I knew that when I tried to do so I merely uttered a confusion of words, while I intended them to have both arrangement and sense. In desperation I spoke of the ‘Metempsychosis,’ and of ‘Wolfgang,’ thinking that by alluding to the tale in ‘Blackwood,’ titled ‘The Modern Pythagoreans,’ Dr. Lightbody would understand me. From this time onwards until a quarter past eleven, I was very restless in body and mind, and indeed only had one lucid interval for a minute or two. By a quarter past eleven this ‘confusion worse confounded’ left me perfectly quiet and conscious.

“My ears were warm and tingling, and I felt very much distressed in mind. Dr. Lightbody informed me that my appearance changed rapidly, and that a dark ring formed round my eyes. I was anxious

to reach the open air, with the hope that it would prevent a return of excitement, which somewhat I dreaded. My friend prepared to accompany me, when I became very sick and vomited. He felt my pulse, said it was very rapid, but did not count it. Shortly after reaching the street the mental depression left, and was followed by a repetition of delirious and lucid intervals, which suddenly came on, and, after continuing for a time, as suddenly left. A slight shake by Dr. Lighbody, or a question clearly and sharply put by him, would recall me to consciousness. The mental depression during the intervals of consciousness was only equalled by the delirium, which continued to increase. We walked about for half an hour, and then called on a friend, in the hope that he might have some lemonade beside him, which might refresh me, and perhaps lessen the effect of the drug. He unfortunately had none. While in his house I had an uncontrollable fit of laughter, which was provoked by hearing him read from 'Neligan' a description of that sense of duality to which I have already referred in this paper. Immediately after this I enjoyed a longer interval of quiet and consciousness than I had done for more than an hour. My heart was throbbing most tumultuously, and somewhat irregularly, and there was a great feeling of warmth about the cardiac region. One of my companions at this time felt my pulse, and said it was rapid and small, but did not count it. On expressing a desire to see Professor Christison, my friends acquiesced and agreed to accompany me. I was becoming drowsy, and was somewhat afraid of coma. Two bottles of lemonade were procured for me, which served to refresh me considerably on my way to the house of Dr. Christison, at Murray-place. For a second time before arriving there I experienced the peculiar feeling of duality; lost control of my tongue; walked unsteadily; and felt that my mouth and throat were constantly dry and hot. The professor helped to allay our (my friends included) apprehension, supplied a little brandy, and recommended repose. With difficulty I reached the house of my second friend, when I certainly felt much better. Consciousness was restored without any well-marked delirium interrupting it; but on counting my pulse, which had certainly fallen considerably, its rate was 120. My tongue was swollen, and notched with my teeth at the margins, and my pupils were still small. I went to bed and rested, but did not sleep until I got a cup of coffee. In the morning I partook of breakfast heartily, but during the day I had the same feeling of oppression and heaviness deep over the supra-orbital arches, to which I have alluded as about the first of the effects of the drug. The excessive loquacity to which I have also referred, and the tendency to get confused during conversation, and the recurrence of the *petit mal*, or something like it, continued for a couple of days gradually to decrease until I was all right again.

"I regretted, after all was over, that nothing had been done to test its anæsthetic property. The effects of this drug are still to a great extent undetermined, but its therapeutic properties are being appreciated in cases of tetanus, though it would be difficult, I think, to explain its mode of action in that disease, and reconcile it with the

effect it had on me during the time I was under its influence. Perhaps its apparently good effects in cases of reflex excitation have merely been a *post hoc*. At all events, more certain information on its action is required than has yet been presented to the profession."

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*On the Effects of the Excessive Use of Sugar on the System.*

By Dr. CHAMPOUILLON.

(*Journ. de Méd. et Chir. Prat.*, Feb. 24, 1864.)

So far back as the year 1846, the author undertook a series of experiments on himself, in order to supply the Minister of War with information as to the possibility of replacing salt by sugar in the preparation of the preserved meat destined for the use of the army during a campaign. In accordance with his instructions, M. Champouillon strictly confined himself to the diet which may be accidentally enforced on the garrison of a besieged city, by the hardships of war, and for several days in succession lived on the following rations:—sixteen ounces of beef preserved in sugar, and four ounces of biscuit: water was his only beverage. Various phenomena supervened in the following order; thirst, sinking at the stomach, distaste for food, nausea, acid regurgitation, epigastric pain, diarrhoea, prostration, and syncope.

"I carefully watched these symptoms," says M. Champouillon, "and the loss of appetite and nausea indubitably proceeded from the absence of variety in my diet; whereas the thirst, heartburn, epigastric pain and diarrhoea were as clearly referable to the difficulty of digesting cane-sugar. In proportion to the impression produced by this substance on the organs of taste, it clogs the palate and destroys natural appetite. Thus excessive indulgence in syrups, sweetmeats, pastes, and highly-sweetened diet-drinks, brings on distaste for food, and annihilates the digestive powers, especially in cases of pulmonary consumption. After expatiating on the transformation of cane-sugar into glucose, in consequence of its contact with the acids contained in the gastric juice, and on the injury caused by the increased activity imparted to the functions of the stomach by frequent repetition of the process, M. Champouillon shows that in addition to the inflammatory congestion thus occasioned glucose powerfully contributes to the establishment of a plethoric condition of the system, and that the prevalent opinion that the excessive use of sugar tends to cause pulmonary irritation and a disposition to atrophy, is but too well justified by facts. In support of this view the author adduces two interesting cases, one of apoplexy, the other of hæmoptysis, in which the agency of this cause was distinctly evident.

"I have often remarked," says he, "in thirty-three years' experience of tubercular disease, that the cough, hectic fever, and night-sweats are increased by the fondness of the patients for sweet substances. I conceive this to be the natural consequence of the combustion of the glucose in the system, a phenomenon which

necessarily implies the production of water, carbonic acid, and heat. It is a well-known fact that three and a half ounces of sugar consumed in the human body evolve an amount of heat equivalent to what might be produced by the combustion of thirty-two grains of charcoal. MM. Favrot and Silberman have shown that fifteen grains of charcoal are sufficient to impart one degree (cent.) of heat to eight kilogrammes, or sixteen pounds of water. If the capacity of the human body for caloric is the same as that of water, three ounces and a half of sugar will, in a subject weighing seventy-five kilogrammes ( $12\frac{1}{2}$  st.), raise during their combustion the temperature of the body four degrees and a half (centigr.)."

The practical conclusion of this paper is that it is desirable to reduce within as narrow limits as possible the consumption of sugar, especially in cases of tuberculosis, and to replace that substance by honey, or a decoction of liquorice.

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*On the Use of Large Doses of Tincture of Cantharides in averting Impending Death from Asthenia.*

By Dr. MUSE, Physician and Surgeon to the U.S. States General Hospital, New Orleans.

(*American Medical Times*, October 25, 1862.)

CASE.—Benjamin Washer, æt. thirty years, came under my care, at this hospital, labouring under pulmonary tuberculosis. On Sunday, September 7th, he became wildly delirious. Taking it, in view of circumstances, to be a case of tubercular meningitis, I treated it as such, and sedative treatment (qualified by supporting measures) was pursued, but without the least benefit, until symptoms of "prostration with excitement" became so unmistakably evident that all direct sedatives were abandoned, and a plan of treatment, from which they were scrupulously excluded, was adopted. On the evening of Tuesday, September 9th, however, he began to sink; he had not slept for three nights; no nourishment, since the first day, could be retained for a moment on the stomach. He continued steadily sinking until the time of my visit on Thursday morning, September 11th, when I found him moribund. *Animal* life might almost be said to be extinct. The radial pulse was still perceptible, and diaphragmatic respiration was yet performed. The reflex action of deglutition could be excited only with the greatest difficulty, and the sphincters were all relaxed.

Professor R. K. Browne, of New York, Surgeon-in-chief at this Hospital, had intimated to me, a short time ago, that he desired me to administer tincture of cantharides in the first desperate case of impending "death by asthenia" which should present itself in any of my wards. Although I did not consider this as a fair case for an experiment, inasmuch as I hardly expected the patient to live longer, I, however, drew his attention to the facts. At his suggestion I commenced the "heroic" use of tincture of cantharides, in doses of forty minims, frequently though irregularly repeated, according to the effect produced. The result was wonderful. In an incredibly short space of time (in the order of time in which I have enumerated them), warmth returned to the skin; the sphincter muscles regained their normal degree of tonicity; the "Hippocratic countenance" entirely disappeared; respiration was once more fully and equably performed;

and every bad symptom vanished as it were by magic. Within three or four hours I had administered between two and three fluid drachms of the tincture. The patient enjoyed a refreshing sleep during the ensuing night. On the following morning he was in the calm possession of his mental faculties; took and retained amply sufficient nutriment, and was fairly on the high road to recovery. The tincture was given in diminished doses, and at length withheld, and the patient, on the Sunday following (September 14th), had entirely regained his previous condition of health; his recovery having been more rapid than his decline, and without the least symptom of strangury having once made its appearance. It is the opinion of Dr. Browne that strangury will never occur in these extreme cases of debility, and that life may sometimes be saved at the least by this heroic remedy. In other cases he recommends it in combination, in smaller quantities, with other remedies, when a pure and powerful stimulant is needed.

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*On the Application of Local Remedies to the Respiratory Passages.*

By Dr. EDOUARD FOURNIÉ.

(*L'Union Méd.*, Févr. 5, 1863.)

Dr. Fournié does not agree with many physiologists in affirming that liquids do not penetrate at all into the trachea, and he has proved experimentally that a certain quantity of liquid may penetrate into the larynx without producing any appreciable sensation. Hitherto the only medicinal agents which could be introduced into the bronchi were in the form of vapours, gases, and emanations, but the action of these substances was unsatisfactory, and pulverised liquids were substituted for them, although with little success. But although liquids in the form of dust do not penetrate into the chest with the regularity, precision, and certainty required by the medical practitioner, there is another class of pulverulent bodies which penetrates with too much facility, and researches with the laryngoscope have removed all doubt upon the subject. Dr. Fournié has clearly ascertained that the dust of charcoal, starch, flint, &c., penetrates into the bronchi, and he has endeavoured to render this fact available in the treatment of disease. In order to obviate any disagreeable sensation on the part of the patient, he recommends the medicinal power to be breathed in a special apparatus which he describes. It consists of an oval wooden box fitted with two tubes, so arranged that the patient breathes the air in the box mingled with the medicinal powder. Laryngoscopic examination and the black expectoration after the use of this apparatus, when charcoal-dust has been employed, prove that the dust has entered the respiratory passages. The same apparatus is available for the inspiration of volatilized iodine, and Dr. Fournié has also thus employed for medicinal purposes starch, alum, tannin, subacetate of lead, and nitrate of silver. The diseases which he has successfully treated have been cases of chronic catarrh, bronchitis, and some of well-marked phthisis.

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*On the Therapeutical Applications of the Solution of the Permanganate of Potash and of Ozone.*

By Dr. SAMUEL JACKSON, Emeritus Professor of the Institutes of Medicine in the University of Pennsylvania.

(*American Quarterly Journal of Medical Science*, Jan. 1864.)

The object of this paper is to test the value of the English ozonized water administered internally, and the result arrived at appears to be well worthy of attention. The water in question is prepared by dissolving two parts of permanganate of potash in 1000 of water. Dr. Jackson writes:—

“Having prepared the solution according to this formula, I proceeded to ascertain its sensible properties on myself. It had no proper taste, but gave a sensation of coolness in the mouth, leaving behind a slight styptic feeling and dryness, which continued for an hour or more. Taken in the dose of a teaspoonful, slightly diluted, three times a day, it produced no prominent symptoms. It caused no inconvenience; there was some increase of appetite, which, however, was good, and an easier digestion. A diuretic action was obvious; there was no general excitement, increase of temperature, or frequency of pulse. A few days after I prescribed the solution in a case of dyspepsia, attended with loss of appetite, disordered digestion, and extreme lassitude. A teaspoonful in half a wineglass of water was directed to be taken four times a day. In a few days the patient called to report a complete recovery.

“Four cases of a similar character were treated in the same manner, with a prompt and successful result.

“In only one slight surgical case have I been able to test its effects. It was a foul ulcer of moderate size on the left leg, the veins being varicose. The solution was given internally, and directed to be used as a wash several times a day, walking to be avoided as much as possible, and the leg to be kept up. In a week the patient presented himself, the ulcer healthy, rapidly cicatrizing, and his appetite and digestion restored, with improved health.

“The following case is of a more decided character:—A young medical friend living in the country called to consult me respecting his health. He presented a complete cachectic aspect. His skin dry and cool, face pallid, no appetite, irregular digestion, very feeble, with eczema of hands, feet, and slightly on the face. I mentioned to him my experience and that of my friend Dr. F. Hinkley, Assist.-Surg. U. S. A., at Campbell Hospital, Washington (to be noticed immediately), and asked him to give the solution of the permanganate of potash a trial. The following extract from a letter received about a week after, gives the following results:—‘A week or more has elapsed since I commenced taking the medicine you gave me, and so far as my appetite and strength are concerned, I know it has done me much good, and I shall continue to take it and give it a fair trial; it has aided my digestion and given tone to my stomach. The quantity of my blood appears to have been increased and its quality improved.’



"In answer to a suggestion I made in a letter to him, that he was probably too hasty in his conclusions, as the last effects mentioned could hardly have been produced in so short a time, and the facts would be better than inferences, he states—'My observations were based on the following facts, whether the time be short or long:—

"My cheeks had more *colour* in them than ever before, for, if you recollect, I have a pale-looking countenance usually. At the time of writing to you, I began to appear plethoric, and felt remarkably well for *me*, whereas before I took the medicine I was anæmic. From the above facts, I was led to assert that it improved the quality and quantity of the blood. In regard to my present state of health, the eruption on my hands and face has almost disappeared, on which I have used the solution as a wash twice a day; but my feet, on which I have not used it, are in the same condition as they were originally, no change. Other symptoms about as they were when I wrote you first.'

"The following case has special interest:—A gentleman advanced in life had been affected last spring with a persistent sense of burning in the urethra, without discharge or apparent inflammation. He was under treatment by Dr. M. M. Levis, who brought him to my office. After six or seven weeks he was relieved. In September he noticed increased secretion of urine, which compelled him to rise several times in the night. In the beginning of October he called on Dr. Levis, who examined the urine. The specific gravity was 1036; it was found to contain mucus in considerable quantity. October 12th, a consultation was held at my office, when I suggested a trial with the solution of the permanganate of potassa. This was adopted, and no other remedy employed. November 5th, the Doctor called and informed me that a complete cure had been effected. The urine had gradually diminished in quantity, and was at that time entirely normal in character.

"This gentleman has since made a journey of several hundreds of miles without inconvenience or any return of the affection.

"The above are the results of my own observations of the therapeutic action of this remedy. But the most remarkable and almost marvellous effects are its prompt, in most cases its immediate action in the treatment of gangrenous wounds in the Campbell Hospital in Washington, and the U. S. Jarvis Hospital, Baltimore.

"On May 19th, my young friend, Dr. F. Hinkle, of Marietta, Pa., called on me in passing through the city. He informed me he was Act.-Assist.-Surg. U. S. A., and was then stationed at Campbell Hospital, Washington. In the course of conversation on his medical and surgical experience, he mentioned the number of cases of gangrenous wounds, particularly in the wounded at the battle of Fredericksburg, the difficulty of treating them, and in the ill success of the treatment pursued. I informed him at once of the observations I had been making with the solution of the permanganate of potassa, and proposed to him to give it a trial. Having a conviction that ozone existed in the solution, I was strongly impressed with the belief that it would be found adapted to such cases. The Doctor at

once acceded to my proposition, and obtained the salt at Mr. Blair's on leaving my office.

"On May 25th, I received a letter from him of date 24th, in which he informs me that 'in reference to the treatment of hospital gangrenous wounds and gangrene, it has already proved beyond all description efficacious. In the action of the remedy you proposed I find more than I expected, and almost all I could wish. I now give you a prominent case as an illustration of its valuable effects and the instant change produced by its local application and its internal administration upon the general character of the whole case:—

"The description of the case will be limited merely to the immediate action of the solution on the gangrenous wound.

"Michael Hoyau, sergt. Co. D. 11th regt., Mass., aged thirty-five; wounded May 3rd, 1863, at the battle of Fredericksburg; admitted to hospital May 8th. An extensive gunshot flesh-wound had been received at the upper fourth of tibia and fibula of the right leg. The integuments for the space of four inches in length and three in breadth, had sloughed from gangrene, leaving at this date, May 23rd, the tibia exposed for three inches. The whole of the leg and up to the middle half of the thigh is infiltrated with a sanious liquid and pus. The discharge is near a quart per diem.

"The left thigh had been penetrated by a Minié ball at the commencement of the popliteal space. A considerable amount of fluid had gravitated back of the knee-joint, which was a source of great suffering. This was relieved by a counter opening giving a free discharge of the fluid. The treatment was commenced May 23rd, 7 A.M., at which time the situation of the patient was very critical. Pulse was thread-like, and 96. Face pallid with anxious expression; head covered with cold sweat. The general temperature below the natural standard; had slept five hours in the last twenty-four. The gangrenous surface looked badly, had a dark-green aspect and flabby, exuding a sanious liquid mixed with debris of dead tissues. The odour was pungent and highly offensive. The whole leg and thigh appeared as though melting into this fluid.

"The following treatment was adopted according to your suggestion:—  
R.—Per. mang. potassa  $\mathfrak{z}$ j, acid. sulph. gtt. xx. aq. comm. Oij.—M. A teaspoonful was given every three hours in a wineglass of water. The gangrenous parts were washed with the solution externally and internally, and charpie soaked in it was kept continually applied, being changed as often as the dressing became saturated with the discharge, or, when that was checked, when it became dry.

"The effects on the gangrenous tissues were instant. The flabby, sloughing, and indolent surface immediately dried up, and in a few minutes presented the appearance of a wound to which a solution of nitrate of silver has been applied; or that of a delicate eschar from a slight burn, yet it gave no sensation of pain. In three hours the odour was greatly lessened, and in less than twenty-four hours it was barely to be perceived.

"In at least fifteen other cases of gangrene, such as of stumps of limbs, &c., its action was not less efficacious.'

"The Doctor concludes:—'I am greatly assured that it (the solution of permang. potass.) is of the greatest value in cases as above mentioned.'

"I received from the Doctor a communication inclosing the history of ten cases of gangrenous wounds treated in Jarvis U. S. Hospital, Baltimore, with the solution, and in all the gangrene was promptly

arrested. He also describes the mode of application which he has found the most useful from his extended experience.

"He also informs me that he is making out a report to the Surgeon-General on permanganate of potassa and its uses. In this he will give the history of the numerous cases—I believe now nearly one hundred—of different affections in which he has employed it. A duplicate, he states, will most probably be published in the *Medical Times*, to which I refer for a full confirmation of what I predicted, from my limited experience respecting the therapeutic action of the solution of the permanganate of potash. I have a strong conviction that science has acquired in this agent a remedy of active powers, of extensive application, easily procured at a small cost, and which can be used without apprehension of risks to be incurred. \* \* \*

"As bromine has been found very successful by Dr. Goldsmith and some of our surgeons in the treatment of gangrenous wounds, it occurred to me that probably its solution in water might develop ozone and antozone similar to the permanganate of potash. I procured a solution of gr. xv to ʒij of water. With the ozone test it instantly struck a fine blue colour, which in a few minutes became of a deep black. From the volatility of bromine great care is required to preserve it for any length of time. The above proportion of bromine is far too strong for internal use. A formula proposed by Ozanam in 1860 makes a preparation that is permanent, and may be employed internally. It is as follows:—

Bromine, pure	.	.	.	.	10 centigram. 2 drops.
Bromide of potassium	.	.	.	.	10 do.
Distilled water	.	.	.	.	100 gram.
M.					

"This solution gives a deep blue with the ozone test, which soon passes into black.

"From the similarity between bromine and chlorine, I was led to test the latter with the ozone test. A drachm of chloride of lime was put into a pint bottle, and a few drops of sulphuric acid added; in a few moments the bottle was filled with chlorine. A dried test paper was then introduced; it assumed in a few moments a buff colour; when the paper was moistened it instantly changed into the blue colour, which soon became black. When the moist paper was introduced these changes took place in the shortest period.

"The test papers acted on by the solutions of permanganate of potash, bromine, and chlorine, exhibited equal intensity of colour; they could not be distinguished.

"These facts appear to indicate ozone or antozone as the active principle of the solution of bromine as well as of the permanganate of potash and of chlorine."

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*On Glycerine and its Applications to Medical and Surgical Treatment.*

By Dr. DÉMARQUAY.

(*British and Foreign Medical and Chirurgical Review*, Jan. 1864.)

Dr. Démarquay has lately published a book on the therapeutical applications of glycerine. This substance has been used internally as a laxative, but its aperient effects are still more evident when employed as an enema, in the proportion of two ounces of glycerine to sixteen of water. Fœtid and gangrenous ulcers are modified by glycerine, and rapidly assume a healthy aspect, if the dressings are changed two or three times a day. It forms a good dressing for malignant carbuncle, and in cases of burns it imparts to the injured surfaces a permanent sensation of coolness, due to its hygrometric properties. It is also a useful adjunct in the treatment of scorbutic, scrofulous, and syphilitic ulcers, and a valuable palliative in cancer. It possesses the property of dissolving iodine; an injection of an ounce of iodine and three ounces and a half of glycerine has been found very efficacious in cases of deep-seated abscess, sinuses, scrofulous wounds, syphilitic bubo, &c. In diseases of the skin, glycerine is often more successful than pomades, as for instance in vulvular hyperæsthesia; in pityriasis capitis a combination of hydrochlorate of ammonia, glycerine, and rose-water, as prescribed by Dr. Gueneau de Mussey, has been found very efficacious: and a sulphur pomade for scabies, made with glycerine instead of lard, possesses the advantages of not staining the linen, and being free from offensive odour. Dr. Démarquay gives numerous formulæ, containing glycerine, applicable to the treatment of diseases of the eyes, ears, mouth, fauces, and larynx. In thrush, stomatitis, and ulcerative sore-throat, M. Blache prescribes an application consisting of two drachms of biborate of soda and one ounce of glycerine.

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*On the Physiological Properties of Nitrobenzole and Aniline.*

By Dr. LETHEBY.

(*Pharmaceutical Journal*, September, 1863.)

The general conclusions which appear to Dr. Letheby to be warranted by the investigations recorded in this paper are:—

1st. That nitrobenzole and aniline in the free state are powerful narcotic poisons.

2nd. That they exert but little action, as local irritants, on the stomach and bowels.

3rd. That although the effects may be quick, and the fatal termination of them rapid, yet nitrobenzole may remain in the system for a long time without manifesting its action.

4th. That the salts of aniline are not nearly so poisonous as the free alkali.

5th. That in rapid cases of fatal poisoning, both the poisons are readily discovered in the dead body.

6th. That in slow cases the poisons may be entirely changed or eliminated, and therefore not recognisable.

7th. That both of the poisons appear to be changed in the body by processes of oxidation and reduction, nitrobenzole being changed into aniline, and aniline and its salts into mauve or magenta.

In an appendix are given notes of the two cases of fatal poisoning by nitrobenzole referred to in the paper, and a detailed account of twelve experiments on animals with nitrobenzole, and three with aniline; also the process employed for the recognition of aniline and nitrobenzole in the dead body, as follows:—

1st. The matters to be analysed in a mortar with a little water, and very slightly acidulated with dilute sulphuric acid.

2nd. They were then submitted to distillation in a glass retort,—the distilled products being saved in three or four separate portions by changing the receiver at different stages of the process. In this way the presence of nitrobenzole was discovered.

3rd. The residue in the retort, when reduced to a pulpy mass by the distillation, was treated with strong spirit of wine and filtered.

4th. The filtered alcohol solution which contained the aniline was treated with a slight excess of subacetate of lead, and again filtered. In this way gum, dextrine, &c., were removed.

5th. The filtrated solution was treated with a slight excess of a saturated solution of sulphate of soda in water. In this manner the excess of lead was precipitated as a sulphate.

6th. The clear solution was then made very alkaline with caustic potash, and distilled to dryness from an oil-bath. The aniline, together with ammonia from the animal matters, was found in the clear, colourless, distilled spirit.

7th. This was neutralized, or rather made acid, with a slight excess of dilute sulphuric acid, and evaporated nearly to dryness in a white porcelain dish. If necessary, the spirit was saved by distillation.

8th. The residue was of a pinkish colour if aniline was present, and occasionally there were little streaks of blue around the edges of the white porcelain dish. If the quantity of the saline residue was not more than a grain or so, it was at once tested by dissolving it in a few drops, or even in a single drop, of dilute sulphuric acid (1 to 1). A small portion of it was then placed upon a strip of bright platinum; and the platinum having been connected with the positive pole of a single cell of a Grove's battery, the liquid was touched with the negative pole; in a few seconds, if aniline was present, the liquid would acquire a bronze, a blue, or a pink colour; the kind of colour being dependent on the amount of aniline present,—bronze being the result of much aniline, and pink of a very little. In this way at least the 1-2000th part of a grain of aniline was easily recognised.

To another portion of the acid liquid placed upon a white porcelain plate, a little peroxide of lead or red prussiate of potash was

added, and a blue or purple reaction followed. This test is not so delicate as the last, for it fails when the amount of aniline is less than the 1-1000th of a grain.

Other tests may be resorted to if necessary, as when the quantity of aniline is large. Thus peroxide of manganese or bichromate of potash may be used in the same way as the red prussiate of potash in the last experiment; but these tests will not answer with less than the 1-500th of a grain of aniline. Lastly, a drop of a solution of chloride of lime may be added to the acid liquid, and if the quantity of aniline exceeds the 1-100th part of a grain it will cause a purple reaction.

9th. If the quantity of saline residue from the last operation is large, and there is reason to believe that much ammonia is present, this alkali must be got rid of, for it greatly interferes with the success of the colour experiments. The residue, therefore, is made moist with water, and rubbed down with about twice its bulk of neutral carbonate of soda. It is then exposed to the air for a short time until the odour of ammonia has passed away. It is then treated with strong alcohol, filtered, acidulated with dilute sulphuric acid, and again evaporated. The aniline is now fit for the colour experiments.

There are no fallacies to these experiments; for although, as is elsewhere shown, strychnia will give nearly the same colour-reactions, yet in the first place this alkali is not volatile like aniline, and will not therefore distil over as the latter does; and in the next place, while the best effects, in respect of colour, are developed with dilute acid and aniline, strychnia requires the concentrated acid. These differences are sufficient to prevent any embarrassment as regards the two alkaloids.

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### *On the Therapeutic Properties of Carbolic Acid.*

By DR. CRACE CALVERT.

(*Lancet*, December 13, 1863.)

Carbolic acid, hydrated oxide of phenyle, or phenic acid, is a white substance, which crystallizes in long prisms, fusible at 93 deg. Fahr., and boiling at 37 deg. It has a slight tarry and aromatic smell, resembling that of wood creosote, and is freely soluble in alcohol, ether, and glycerine, partially so in glacial acetic acid, and only slightly so in water, of which 100 parts will dissolve only three parts of carbolic acid. It is easily prepared by treating the oils of tar, which distil between 350 deg. and 400 deg., with caustic lye, removing the caustic lye solution from the neutral oils and adding hydrochloric acid to the alkaline solution, when the carbolic acid is liberated, and rises to the surface as an oily fluid, from which, by distillation, the above-mentioned therapeutic agent is obtained.

"My friend and colleague, Thomas Turner, Esq., Senior Surgeon at the Manchester Royal Infirmary," says Dr. Calvert, "read,

at the last meeting of the Lancashire and Cheshire Branch of the British Medical Association, a lengthy paper 'On the uses of Carbolic Acid as a Remedial Agent,' from which I extract the following:—

"In cases of relaxation of the mucous surfaces, the solution of carbolic acid in glycerine, applied by means of a brush or sponge, is most beneficial. Thus its use is indicated in polypi of the nostrils, as well as ozæna, and in all putrid discharges from the mouth, throat, nostrils, ears, rectum, and vagina.

"I shall next call your attention to the use of carbolic acid in *Diphtheria*, in which disease it is a most valuable remedy, used topically to the throat. . . . To apply it I use a sponge-mop, which should be used freely, but not saturated, lest a drop should fall into the larynx. The escharotic effect of carbolic acid is confined to the surface to which it is applied, there being no spreading to the contiguous parts, which may happen in the case of nitric acid. The aqueous solution of carbolic acid may be also used as a gargle.

"*Ulcers*.—I apply carbolic acid in different degrees of solution according to the character of the sore, to carbuncle and ill-conditioned sores.

"*Fistula*.—I apply it by means of a wax taper used in lighting gas, or, if the fistula will admit of it, I use a catgut or wax bougie, taking care to carry it to the bottom of the fistula. I have never succeeded in anal fistula where there is a communication with the gut. In these cases an operation is still necessary.

"*Hæmorrhoids*.—The action of carbolic acid is mainly to corrugate, and therefore to obliterate, the sac of the pile. It coagulates the contents, which may be squeezed out; and by corrugation it empties the pile, by which the two surfaces are brought into contact, and thus the sac is obliterated.

"Mr. Turner also, in a private note to me, speaks of the use of carbolic acid to fœtid ulcers in the following terms:—'It may be advantageously used as a solution of one part of acid in forty parts of water, in fœtid, ill-conditioned ulcers. It alters the action of the blood-vessels, causing a purulent instead of a sanious discharge, and destroys almost immediately the offensive smell of the secretion. In ulcers having a communication with carious bone, or even necrosis (where the bone is dead), it has, in its diluted state, a good effect when injected into the sinuses leading to the diseased bones. When there is mere caries or ulceration of the bone it effects the healing process, and in necrosis it promotes the exfoliation of the dead portion. In gangrenous and all offensive sores, it removes all disagreeable smell and putrescency, and may render the discharge innocuous to the contiguous living and unaffected tissues. In its diluted state, therefore, it is a great boon to patients labouring under that class of disease.'

"When Mr. Turner wishes to employ carbolic acid in a less diluted state than the aqueous solution, and yet not in its full strength as a caustic, he prefers the following solution:—He mixes two drachms

of pure carbolic acid in one drachm of liquor potassæ and half a pint of water.

"It is with pleasure that I am able to add that Mr. Oscar Clayton and Mr. Campbell De Morgan have informed me of several successful applications which they have made of carbolic acid, confirming many of the results of Mr. Turner's above described.

"Mr. Oscar Clayton states that in two cases of fœtor of breath arising from a diseased state of the mucous membrane covering the tonsils, he applied to the parts a mixture of equal proportions of glycerine and carbolic acid, and with perfect success.

"Mr. Campbell De Morgan has also applied the glycerine solution of carbolic acid with success to several cases of lupus.

"Dr. James Whitehead, of Manchester, prefers treating this disease (lupus) with an ointment made of half a drachm of carbolic acid to one ounce of spermaceti ointment.

"Mr. Oscar Clayton has also successfully employed the aqueous solution to several skin diseases—viz., lepra, tinea capitis, rupia, &c.

"Dr. Roberts and other medical men have employed carbolic acid with advantage internally for dyspepsia and other derangements of digestion.

"Dr. Pattison, of St. John's Wood, writes to me as follows:—'I have prescribed your carbolic acid in several cases of fungoid disease during the last nine months with marked success. In three cases of fungus hæmatodes in which I employed it, the disease in all was checked in a remarkable manner. A thick crust was speedily formed on the ulcerated and bleeding surfaces, the exhausting discharges were completely arrested, and in one case there was great diminution in the size of the fungous mass. Your carbolic acid is almost a specific in cases of anthrax.'

"I also think it well to insert the following remarks from Dr. Thomas Hughes, London:—

"'SIR,—I have used Dr. Calvert's carbolic acid as an external application in cases of sloughing wounds with the most marvellous effect; and in no case was its effect more strikingly manifest than in the case of Rogers, one of your miners, who received such a contusion of the hand as to destroy the arteries leading to the index and little fingers; and, in spite of every effort made to restore the circulation in the fingers, sloughing took place, and which appeared to spread and extend to the hand and arm with such rapidity that if it had not been for the timely application of the carbolic acid the man would have lost his arm from the most destructive sloughing I ever witnessed. The effect of carbolic acid was so decidedly marked as to leave no doubt of its wonderful effects in checking the spreading of sloughing, and in accelerating the separation of slough. It seemed almost to have the effect of promoting the growth of granulations, and hastening the healing of the wounds. I have used carbolic acid in several other cases with the same happy effect.'

"I have found it very successful in one or two cases of intestinal



worms, given in doses of a teaspoonful of the aqueous solution in a tumbler of water morning and evening. I have also applied the water solution externally with perfect success in several cases of psora.

"Two eminent French physiologists, MM. Gratiolet and Lemaire, have published a most interesting paper on the 'Action of Carbolic Acid in arresting Putrefaction;' and they have made the important observation that, whilst it does not interfere with chemical fermentations, such as the conversion of amygdaline into hydruret of benzoile, and the conversion of myronic acid by myrosyne, it completely arrests all vegetable and animal fermentations which arise from cryptogamic life. They have also observed that when carbolic acid is mixed with the vaccine virus, it entirely prevents its peculiar action upon animal organization.

"These valuable observations of MM. Gratiolet and Lemaire strongly impress me with the idea that the use of carbolic acid might prove of great advantage in the early stages of consumption, if applied in the following manner—viz., by making the patient frequently inhale the vapour of the acid by means of an inhaler containing some cotton-wool saturated with the acid so that the inspired air must pass through the wool. I would at the same time administer a teaspoonful of the aqueous solution mixed with two ounces of peppermint-water three times a day. I think also that the same treatment might be advantageously tried in cases of scarlatina and typhoid fever, with the addition of saturating the air of the chamber as far as possible with the vapour, by placing lint or wool steeped in carbolic acid in various parts of the room. I would also administer once a day an enema consisting of a weak solution of carbolic acid."

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*The Ordeal Bean of Old Calabar; its Action on the Animal Body compared with that of Woorara and Conia.*

By Dr. GEORGE HARLEY.

(Proceedings of the Royal Medico-Chirurgical Society, June 9, 1863.)

The author begins his communication by a brief account of the literary history of the ordeal bean. He next alludes to the botanical characters of the plant. It is a long twining shrub, with papilionaceous flowers and leguminous fruit, the kernels of which, both in taste and appearance, resemble the common white haricot bean. The natives call the plant Eséré, and it was by the missionaries named the ordeal bean, in consequence of its being given to persons suspected of witchcraft, with the view of discovering their innocence or guilt. The paper is illustrated by diagrams of the plant, by specimens of the bean and its preparations, and by illustrations of its effects on the pupil of a human being and of a cat. The conclusions drawn by the author are as follows:—1. The ordeal bean may cause contraction of the pupil when taken internally as well as when applied locally. 2. That atropine and the Calabar

bean are physiologically antagonistic. 3. That the ordeal bean paralyses the motor nerves, and leaves the intelligence and muscular irritability unimpaired. 4. That it excites the salivary and lachrymal secretions. 5. That it destroys life by paralysing the nerves supplying the respiratory muscles—being, in fact, a respiratory poison. 6. Although it may weaken the heart's power, it neither stops the circulation nor arrests the heart's action. It is not, in fact, a cardiac poison. 7. It is closely allied in its effects to woorara and conia, most closely, perhaps, to the latter; but it differs from both in its tendency to produce muscular twitchings, and in its power of inducing contraction of the pupil. Neither woorara nor conia exerts generally or locally any such effect on the iris. 8. The ordeal bean will prove a most valuable addition to the Pharmacopœia, by not only giving us a useful myopic, but also a powerful anodyne, capable of soothing nerve-irritation without either destroying intelligence or endangering life by arresting the heart's action.

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